

September 29, 2015

Washington State Department of Ecology
Central Regional Office
Toxics Cleanup Program
1250 W. Alder Street
Union Gap, WA 98903

Attn: Ms. Mary Monahan, Mr. Matt Durkee, and Ms. Valerie Bound

**RE: SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT
(SEPTEMBER 2014 THROUGH JUNE 2015)
CLOSED CITY OF YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

Dear Mary, Matt, and Valerie,

On behalf of the City of Yakima (City), Landau Associates is pleased to provide the attached Supplemental Remedial Investigation (RI) Report for the closed City of Yakima Landfill Site (Site). The report presents the results and findings of the supplemental RI activities conducted at the Site between September 2014 and June 2015.

At the direction of the Washington State Department of Ecology (Ecology), the City entered into the Voluntary Cleanup Program (VCP) in February 2014 (VCP Site 1927; Project CE040) and requested that Ecology review reports summarizing the results of the previous Site investigations conducted through 2012 and provide an opinion concerning the status of the RI process. Following review of the reports included with the VCP application, Ecology issued an Opinion Letter (2014) regarding the current Site investigation process. The Opinion Letter indicated that characterization of soil and groundwater at the Site was insufficient to support the selection of a cleanup action, and that additional investigation was needed to complete the RI process.

Based on the data gaps identified in the Ecology Opinion Letter, an RI work plan (Work Plan) was prepared and submitted for Ecology's approval on August 11, 2014. The Work Plan outlined the planned approach for further investigation at the Site and provided the basis for the collection and the evaluation of data gathered during the planned supplemental RI activities. Upon completion of the initial phases of field activities outlined in the Work Plan, an Interim RI Data Report was submitted to Ecology on April 14, 2015 for review and consideration.

The Interim RI Data Report summarized the results and initial conclusions from Site investigation activities conducted between September 2014 and January 2015. These activities included completion of two of the four planned quarterly groundwater sampling events (i.e., September and December 2014); further investigation of the extent of municipal solid waste (MSW) and new landfill gas (LFG) probe installation (October 2014); and completion of a Site-wide LFG survey (January 2015). The Interim RI Data Report presented the results of these initial RI activities and provided preliminary conclusions regarding the nature and extent of contamination at the Site, based on the data collected through January 2015.

Upon submittal of the Interim RI Data Report, Ecology was requested to provide a written opinion, per the procedures outlined under the VCP, on the content and preliminary conclusions included in the report; this requested Opinion Letter was provided to the City in early June 2015. The 2015 Opinion Letter indicated that based on the current understanding of the Site: “further remedial action is necessary to clean up the contamination at the Site”. Ecology indicated that the Site is defined by the nature and extent of contamination associated with the following releases:

- Gasoline range organics (GRO), n-nitrosodiphenylamine, and 4,4'-DDD in soil
- Heavy oils, vinyl chloride (VC), bis(2-ethylhexyl)phthalate (BEHP), 3,3'-dichlorobenzidine, arsenic, iron, manganese, nitrate, sodium, and low pH in groundwater.

Ecology stated in the 2015 Opinion Letter that the current characterization of the Site (based on data collected between September 2014 and January 2015) was not sufficient to select a cleanup action; however, once the remaining planned supplemental RI work was completed, the characterization of the Site should be sufficient to select an appropriate cleanup action.

Based on the approach provided in the submitted Work Plan and ongoing coordination with Ecology, the Supplemental RI Report has been prepared to document the results of the additional RI activities conducted between March and June 2015 and provides updated conclusions and considerations on potential required cleanup strategies for the Site.

The Supplemental RI Report presents and discusses the overall field investigation, laboratory analytical results, and the findings and conclusions based on the RI activities conducted between September 2014 and January 2015. The City requests that Ecology review the attached report and provide a written opinion on the sufficiency of the completed RI activities to satisfy the issues noted in the Opinion Letters (2014, 2015); and the relevancy and applicability of the results, findings, and the conclusions concerning potential remedial action requirements for the Site.

Ecology's 2014 Opinion Letter stated that a Terrestrial Ecology Evaluation (TEE) was required for the Site. A TEE was provided as an attachment to the Interim RI Data Report submitted to Ecology on April 14, 2015. Ecology's 2015 Opinion Letter specific to that submitted report noted that if the proposed

institutional controls discussed in the report are placed on the Site, with a conditional point of compliance [i.e., 6 feet (ft) below ground surface (BGS)], Site conditions will meet the TEE simplified evaluation procedure criteria for no further evaluation. The 2015 Opinion Letter also notes that the conditional point of compliance of 6 ft BGS may or may not be necessary depending on the specific type of barrier (e.g., containment) installed. The originally-submitted TEE is included as an attachment to the Supplemental RI Report.

In general, the Supplemental RI Report includes the following information:

- A summary of previous investigations and remedial actions;
- A description of the supplemental RI activities completed between September 2014 and June 2015;
- Site geology and hydrogeology information;
- Site-specific screening criteria;
- A media-specific presentation of the nature and extent of Site contamination;
- Identification of Site-specific contaminants of concern (COCs);
- Conceptual Site model (CSM) information, including chemical fate and transport dynamics and potential exposure pathways and receptor information;
- Proposed Site cleanup standards; and,
- Remedial action and feasibility study (FS) considerations.

Elements presented in the report, which have been revised and updated based on the results of the supplemental RI activities, include:

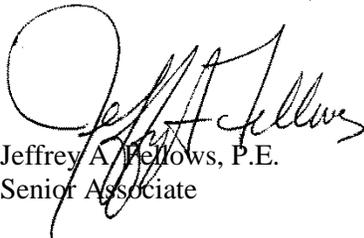
- Geologic cross-sections, including information from the new groundwater well and LFG probe installations;
- Groundwater elevation and contour maps (based on the September 2014 through June 2015 groundwater sampling events);
- Updated information regarding the extent of municipal solid waste (MSW) at the Site;
- Tabulated RI analytical data evaluated relative to Site-specific screening criteria; and
- The nature and extent of Site contamination, including an updated discussion on dissolved metals and low pH levels associated with area-wide aquifer-reducing conditions, and LFG (specifically methane) concentrations.

Relevant historical data for the Site has been tabulated and are included as Appendix A. Appendices B through D include the Sampling and Analysis Plan, Quality Assurance Project Plan, and Health and Safety Plan, respectively, which supported implementation of completed RI activities (and future activities, as necessary). Appendices E through H include a full compilation of the groundwater monitoring well construction logs, exploratory test pit logs, LFG/soil gas probe logs, and soil boring logs, respectively. Appendix I (on CD) including the laboratory-generated data reports, and Appendix J includes both the data usability and validation reports.

The City feels that the results and conclusions summarized in the attached Supplemental RI Report sufficiently satisfy the requested evaluation outlined in Ecology's 2014 and 2015 Opinion Letters and that the understanding of Site conditions is substantive enough to move forward with the evaluation of potential remedial alternatives. Given these consideration, the City requests that Ecology provide its review and written opinion regarding the sufficiency of the completed RI activities to support preparation of a focused FS to evaluate practicable alternatives specific to Site conditions and the reality of future redevelopment strategies.

During the review process, please let us know if you have any questions, initial concerns, or would like additional information to support your review. The City appreciates your ongoing assistance and support with management of the Site through the VCP.

LANDAU ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Jeffrey A. Fellows". The signature is written in a cursive style with a large initial "J".

Jeffrey A. Fellows, P.E.
Senior Associate

JAF/TLS/kes

cc: Ecology – Central Region, VCP Coordinator
Joan Davenport, City of Yakima
Jeff Cutter, City of Yakima
Brett Sheffield, City of Yakima
Kurt Peterson, Cascadia Law Group PLLC

**Agency Review DRAFT
Supplemental
Remedial Investigation Report
Closed City of Yakima Landfill Site**

September 29, 2015

Prepared for

City of Yakima

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EXECUTIVE SUMMARY

This report presents the data collected between September 2014 and June 2015, and the associated findings and conclusions, for the supplemental Remedial Investigation (RI) implemented at the closed City of Yakima Landfill Site (Site) located in Yakima, Washington. The Site is defined by the extent of the municipal solid waste (MSW) within the former landfill, including the extent of contamination associated with potential releases from the former landfill.

Through their review of previously-submitted documentation, the Washington State Department of Ecology (Ecology) noted that additional characterization of the Site was necessary in order to evaluate effective cleanup alternatives (Ecology 2014, 2015). Based on the approach provided in the submitted Work Plan, this Supplemental RI Report documents that the results of the completed RI activities provide sufficient information to allow for the effective evaluation and selection of an appropriate cleanup action that will address Site-specific conditions.

PURPOSE AND SCOPE OF REMEDIAL INVESTIGATION

At the direction of Ecology, the City of Yakima (City) entered into the Voluntary Cleanup Program (VCP) in February 2014 and requested that Ecology review reports summarizing previous investigation results (through 2012) relating to the Site and provide its opinion concerning the status of the RI process. Subsequent to this review, Ecology issued an Opinion Letter (2014) indicating that characterization of soil and groundwater at the Site was insufficient to support the selection of a cleanup action, and that additional investigation was needed to complete the RI for the Site.

Based on the data gaps identified in Ecology's 2014 Opinion Letter, an RI work plan (Work Plan) was prepared and submitted on August 11, 2014 for Ecology's approval. The Work Plan outlined the planned approach for further investigation at the Site and was developed to meet the requirements for an RI as defined by the Washington State Model Toxics Control Act (MTCA) Cleanup Regulation [Washington Administrative Code (WAC) 173-340-350]. The Work Plan described the additional RI activities to be performed, including installation of new groundwater monitoring wells, collection of soil and groundwater samples for chemical analyses, further investigation of the extent of MSW, survey of landfill gas (LFG) concentrations, and preparation of a Terrestrial Ecological Evaluation (TEE). The Work Plan also included a site-specific Sampling and Analysis Plan (SAP), a Quality Assurance Project Plan (QAPP), and a Site Health and Safety Plan (HASP), per Ecology's requirements.

Upon completion of the initial phases of field activities outlined in the Work Plan, an Interim RI Data Report was submitted to Ecology for review and consideration (Landau Associates 2015). The Interim RI Data Report summarized the results and initial conclusions from Site investigation activities conducted

between September 2014 and January 2015. These activities included completion of two of the four planned quarterly groundwater sampling events (i.e., September and December 2014); further investigation of the extent of MSW and new LFG probe installation (October 2014); and completion of a Site-wide LFG survey (January 2015). The Interim RI Data Report presented the results of these initial RI activities and provided preliminary conclusions regarding the nature and extent of contamination at the Site, based on the data collected through January 2015.

Upon submittal of the Interim RI Data Report, Ecology was specifically requested to provide a written opinion, per the procedures outlined under the VCP, on the content and preliminary conclusions included in the report; this requested Opinion Letter was provided to the City in early June 2015 (Ecology 2015). The 2015 Opinion Letter indicated that based on the current understanding of the Site: “further remedial action is necessary to clean up the contamination at the Site”. Ecology indicated that the Site is defined by the nature and extent of contamination associated with the following releases:

- Gasoline range organics (GRO), n-nitrosodiphenylamine, and 4,4'-DDD in soil
- Heavy oils, vinyl chloride (VC), bis(2-ethylhexyl)phthalate (BEHP), 3,3'-dichlorobenzidine, arsenic, iron, manganese, nitrate, sodium, and low pH in groundwater.

Ecology stated in the 2015 Opinion Letter that the current characterization of the Site (based on data collected between September 2014 and January 2015) was not sufficient to select a cleanup action; however, once the remaining planned supplemental RI work was completed, the characterization of the Site should be sufficient to select an appropriate cleanup action (Ecology 2015).

Based on the approach provided in the submitted Work Plan, this Supplemental RI Report has been prepared to document the results of the additional RI activities conducted between March and June 2015 and provides updated conclusions and considerations on potential cleanup strategies for the Site.

SCREENING CRITERIA

As part of the RI process, screening levels (SLs) were developed for soil and groundwater that are protective of human health and the environment (in accordance with MTCA requirements). Ecology's Opinion Letters (2014 and 2015) identified that consideration of MTCA Method A and B criteria for unrestricted land uses is appropriate for the Site; therefore, these criteria were used as the basis for the development of SLs.

The Site-specific groundwater SLs were established as the lower of the values protective of groundwater as drinking water and as surface water, based on the evaluation methodology outlined in Section 6.0 of this report. For several compounds, the SL criterion was lower than the laboratory-specific quantitation limit [QL, applied as the practical quantitation limit (PQL)]. In those instances, the initial chemical-specific SL was raised to the laboratory-specific QL for data comparison and screening purposes.

As appropriate, soil and/or groundwater SLs could be ultimately adjusted to regional- or Site-specific background values, in accordance with the procedures outlined in MTCA and based on additional RI results, as appropriate. Surface water-specific SLs were not developed for the Site because surface water is not considered an affected media, and because the groundwater SLs have been established to be protective of surface water.

Site-specific soil SLs were also developed for the Site based on MTCA Method A and B criteria for unrestricted land uses, including Method B criteria derived based on direct contact and the 3-phase protection of groundwater model results. However, certain Site-specific soil SLs were subsequently adjusted, based on the RI groundwater analytical results, when a preliminary empirical demonstration could be made that the soil concentrations for a given compound are protective of groundwater [per WAC 173-340-747(3)(f)].

Based on MTCA cleanup regulations [WAC 173-340-710(7)(c)], the solid waste closure requirements in chapter WAC 173-304 are considered the minimum requirements for potential cleanup actions for landfills closed prior to 1991. These regulations provide relevant compliance standards that are considered generally applicable and protective for contaminant migration or exposure, in the absence of other directly applicable regulations. Based on current Site conditions (i.e., no onsite structures, etc.), LFG concentrations (in particular methane) at the perimeter of the Site were used as the basis for LFG SLs.

TERRESTRIAL ECOLOGICAL EVALUATION

As mentioned previously and in accordance with Ecology's 2014 Opinion Letter, a TEE has been prepared based on Site conditions and was included with the Interim RI Data Report. The TEE concludes that the MTCA TEE exclusion assessment criteria cannot be met for the Site. However, consideration of the relevant risk-based screening criteria, the conditional point of compliance, and the likelihood of future institutional controls (e.g., restrictions on subsurface activities, etc.) allows the Site to meet the TEE simplified evaluation procedural criteria; therefore, no further evaluation is required.

In Ecology's 2015 Opinion Letter, Ecology commented that if presumed institutional controls are established at the Site, with a conditional point of compliance [i.e., 6 feet below ground surface (BGS)], that Site conditions will meet the TEE simplified evaluation procedure for no further evaluation (Ecology 2015). A copy of the TEE report is included again with this Supplemental RI Report as Attachment 1.

CONTAMINANTS OF CONCERN

Based on the investigation strategy outlined in the submitted Work Plan, soil and groundwater samples were selectively analyzed for total petroleum hydrocarbons (TPH), metals, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and conventional parameters (e.g., nitrate, nitrite, chloride, fluoride, pH, etc.). Based on the completed supplemental RI results, the detections of these compounds at the Site at concentrations above the laboratory reporting limits (RLs), with the exception of metals in both soil and groundwater samples, were very limited. Furthermore, many of the compounds that were detected were identified in samples collected at locations hydraulically upgradient of the Site and, therefore, are not considered to be associated with historical Site operations. A summary of the RI results (by media type) is provided below.

Soil

Metals were the most frequently detected compounds in soil at the Site, including arsenic, barium, cadmium, calcium, chromium (III), iron, lead, magnesium, manganese, silver, and sodium; hexavalent chromium, mercury, and selenium were not detected at concentrations above the laboratory RLs in the soil samples for which they were analyzed during the supplemental RI activities. Of these detected metals, only iron was detected at a concentration greater than its corresponding SL; however, all of the detected concentrations were below the statewide 90th percentile value for iron [i.e., 43,100 milligrams per kilogram (mg/kg)]. Therefore, iron is not considered a contaminant of concern (COC) in Site soil.

Based on the data evaluated as part of the supplemental RI activities, TPH compounds, conventional and field parameters, PCBs, PAHs, and VOCs are also not identified as COCs in Site soil. One pesticide (4,4'-DDD) concentration and one SVOC (n-nitrosodiphenylamine) concentration exceeded their corresponding SL in only one soil sample each that was collected during the supplemental RI activities. The SLs established for these two compounds were based on protection of groundwater (3-phase model) results using surface water criteria inputs. However, both compounds were not detected in any of the groundwater samples analyzed from wells hydraulically downgradient of the Site (i.e., off site/near the river). Given this consideration, the SLs for these two compounds were appropriately revised to be based on the protection of groundwater (3-phase model) results using drinking water criteria inputs. Neither of the detected concentrations of these two compounds exceeded the revised SLs based on protection of drinking water criteria.

Based on the results of the soil samples collected and analyzed as part of the supplemental RI activities, and the evaluation of these results with respect to appropriate SLs and overall Site dynamics, no Site-specific COCs are identified for soil. Nevertheless, the likely redevelopment scenarios for the Site

will include varying levels of containment of Site soils through incorporation of impervious services (infrastructure, roadways, etc.), essentially capping the soil in place. If Site remedial action is required, the focus will be to address impacts to groundwater and from LFG (i.e., methane), as discussed below.

Groundwater

As with the soil results, the most frequently detected compounds in groundwater were metals (both total and dissolved). Of the dissolved metals detected, dissolved arsenic, iron, manganese, and sodium were identified at concentrations greater than their corresponding SLs in several samples. These SL exceedances were identified at locations throughout the area of investigation, both within the Site, and at locations hydraulically upgradient and hydraulically downgradient of the Site. In part, these detected concentrations reflect the area-wide reducing conditions that are apparent in the groundwater aquifer, as discussed below.

TPH compounds [specifically TPH-diesel (TPH-D) and TPH-oil (TPH-O)] were identified at several sampling locations at concentrations greater than their respective groundwater SLs; however, all but one of the TPH detections were at locations hydraulically upgradient of the Site in areas not considered to be associated with historical Site operations. TPH-D was detected above its SL in one Site sample in December 2014, but the detected concentration was below the SLs based on the analysis using silica gel cleanup (SGC). Therefore, TPH is not considered a COC in groundwater for the Site.

Other compounds that were detected in groundwater samples at concentrations that exceeded their corresponding SLs during completion of the supplemental RI activities were also evaluated as potential COCs for the Site. These compounds include pH, nitrate, VC, n-nitrosodiphenylamine, BEHP, and pesticides (4,4'-DDD, 4,4'-DDT, and endosulfan II). The relative exceedances and associated evaluation of these compounds as potential COCs in groundwater for the Site is summarized as follows:

- pH: Low pH levels [below the SL range (<6.5)] were identified in numerous samples throughout the area of investigation. These low pH levels are associated with the groundwater reducing conditions observed throughout the area of investigation. pH is considered a Site-specific COC in groundwater.
- Nitrate: Nitrate exceeded its corresponding SL in only one sample at a location adjacent to and hydraulically downgradient of the Site; nitrate did not exceed its SL in any other sample collected during the course of supplemental RI activities. Although this single exceedance is statistically insignificant in the scope of overall supplemental RI analytical results, nitrate is considered a Site-specific COC in groundwater.
- VC: VC was also detected above its corresponding SL in one quarterly sample at one Site location only. Similar with the nitrate exceedance, the VC exceedance is considered statistically insignificant compared to the overall scope of supplemental RI analytical results. For Site evaluation purposes, VC is considered a Site-specific COC in groundwater.
- N-nitrosodiphenylamine: The compound was detected above its corresponding SL at one Site well location across two quarters only; it was not detected at any other location above its SL

during the course of RI activities. Since n-nitrosodiphenylamine was not detected at any location hydraulically downgradient or near the river, the original SL for the compound (based on protection of surface water) can be revised based on protection of groundwater as drinking water criteria. The detected concentrations at MW-106 do not exceed the revised SL; therefore, n-nitrosodiphenylamine is not considered a Site-specific COC in groundwater.

- **BEHP:** BEHP was the most frequently detected SVOC in the area of investigation, and exceedances of the compound's SL were identified at sample locations within the Site, hydraulically upgradient, and hydraulically downgradient of the Site. SL exceedances were only identified in samples collected during the September and December 2014 rounds of sampling. BEHP is a widely-used plasticizer and is often identified as a cross-contaminant in laboratory analyses. The sporadic frequency of detections of the compound and their locations through the area of investigation indicates that its presence is likely linked to cross contamination versus actual Site conditions. Therefore, BEHP is not considered a Site-specific COC in groundwater.
- **Pesticides (4,4'-DDD, 4,4'-DDT, and endosulfan II):** These three pesticides were detected above their corresponding SLs at Site well MW-103; only 4,4'-DDD exceeded the SL in all four quarters sampled at that location. The results for these three compounds do not exceed their corresponding SLs in samples from any other Site or hydraulically downgradient well. Similar with the revised SL evaluation summarized above for n-nitrosodiphenylamine, the detected concentrations of these three pesticides do not exceed their revised SLs based on protection of groundwater as drinking water. Therefore, these three pesticides are not considered Site-specific COCs in groundwater.

Based on the summary outline above and as discussed in Section 8.0, dissolved metals (i.e., arsenic, iron, manganese, and sodium), pH, nitrate, and VC are carried forward as Site-specific COCs in groundwater. These compounds are further evaluated as part of our consideration of potential remedial action requirements for the Site.

Landfill Gas

Based on the results of the Site-wide LFG surveys conducted in January and June 2015, none of the methane concentrations measured along the southern and eastern perimeters of the Site were greater than the methane SL. However, methane concentrations greater than the SL were measured during both surveys in samples collected along the western, northwestern, and northern boundaries. The LFG probes along the southern and eastern perimeters were installed in areas where no wood debris or MSW was identified. The LFG probes to the west, northwest, and north of the Site were installed in areas of wood debris (but no MSW); the presence of this wood debris is influencing methane concentrations, which are not directly linked to historical MSW landfill activities at the Site. Nevertheless, methane is considered a COC for the Site.

CONCEPTUAL SITE MODEL INFORMATION

Based on the results discussed in this Supplemental RI Report, and with the exception of metals which have been detected in both soil and groundwater samples, the detections of other compounds in Site soil and groundwater are very limited. In general, the dissolved metals results and pH levels in groundwater indicate that the entire area of investigation is being affected by groundwater aquifer reducing conditions resulting from the presence of wood debris, MSW, or both. Oxygen is consumed during the natural degradation of solid waste and wood debris in the subsurface creating reducing conditions that allow some metals to become mobile through precipitation into the dissolved phase. This is a biological process during which available electron acceptors are chemically reduced sequentially, based on potential energy yield (oxygen, nitrate, manganese, iron, arsenic, and sulfate), as conditions transition from an aerobic to anaerobic environment. As consumption of the electron acceptors continues during this natural attenuation process, then reducing conditions increase.

As groundwater moves first through the areas of buried wood debris located hydraulically upgradient of the Site, and eventually through the areas of combined wood debris and MSW, the available oxygen/carbon in the aquifer is consumed, thereby creating reducing conditions. As the groundwater passes through the Site and leaves the area of combined wood debris and MSW, the reducing conditions begin to dissipate as the metals concentrations decrease, the pH levels increase, and nitrate and sulfate concentrations start to rebound. The hydraulically cross-/downgradient areas to the south of the Site do not appear to display the reducing conditions seen in other parts of the area of investigation, in part because of the lack of wood debris and MSW to provide an organic electron donor, and the continued “fringe” influence of groundwater that is higher in oxygen content.

Stormwater infiltration at the Site is also a component of the reduced aquifer conditions identified within the area of investigation. Stormwater infiltrates through the surface layers of wood debris, which are dispersed throughout the predominately unpaved area of investigation, and mobilizes this additional carbon source that subsequently influences reducing conditions and pH levels in the underlying groundwater aquifer. Mitigation of these area-wide reducing conditions could possibly be achieved through source removal [i.e., removal of the material (wood debris/MSW) that is providing the electron donor (carbon)]. However, given the size and complexity of the Site and the surrounding properties, mass removal of these materials is impracticable and would present a substantial and disproportionate cost.

With respect to LFG concentrations, methane and the other LFG components are generated by microbes during the anaerobic degradation of materials such as MSW and wood debris; this degradation process is highly dependent upon the type of waste, the moisture content, and the subsurface conditions. Depending on site conditions, LFG production can last from 20 years to more than 50 years. Based on the

methane concentrations in LFG probes located within the Site, some level of LFG production is anticipated to occur into the near future.

No buildings or other structures are present at the Site, so the LFG that is being generated passively escapes to the atmosphere. As development of the Site is considered, future design strategies will likely need to consider potential mitigation of LFG (specifically methane concentrations), or the source for LFG production (i.e., MSW, wood debris) could be removed, which as mentioned previously, is impracticable on a large scale.

CLEANUP STANDARDS EVALUATION

Based on the guidelines established under MTCA, cleanup standards consist of: 1) cleanup levels (CLs), as defined by regulatory criteria, which are determined to be adequately protective of human health and the environment, and 2) the point(s) of compliance at which the CLs must be met for each media of concern. The Site-specific cleanup standards developed are then used to set the basis for establishing remedial action objectives (RAOs) for potential remedial actions, if required, as part of the Feasibility Study (FS) process.

CLs for affected media developed under MTCA are the concentrations of a compound that are protective of human health and the environment for the identified potential exposure pathways, based on the highest beneficial use (HBU) and the reasonable maximum exposure (RME) for each affected media. The point of compliance is the location on the Site where the specific CL must be attained. Ultimately, the point(s) of compliance for affected media will be selected by Ecology and presented in the Site Cleanup Action Plan (CAP), as appropriate.

The media-specific SLs discussed in this Supplemental RI Report were initially considered as applicable CLs, with the CLs for COCs potentially raised to the laboratory QL (applied as the PQL) or natural- or regional-background concentrations, if appropriate, per the guidelines under MTCA. Based on the evaluation of the supplemental RI results, CLs are evaluated for groundwater and for LFG constituents (i.e., methane), but not for compounds detected in soil as no Site-specific COCs were identified for soil.

Based on the Site-specific groundwater COC evaluation conducted in Section 8.0 and summarized in Table 12, along with an understanding of the potential receptors, exposure pathways, and the conceptual Site model (CSM; Section 9.0 and Table 13), the HBU for groundwater at the Site is considered ingestion of groundwater as drinking water. Based on this groundwater HBU, the reasonable maximum exposure (RME) for groundwater consumption as drinking water is by commercial/industrial and/or Site construction workers. As a result, federal maximum contaminant level (MCL) criteria, Washington State Board of Health MCL criteria, MTCA Method A criteria, and MTCA Method B formula values were evaluated as potential CLs for Site-specific COCs in groundwater.

As discussed previously, Site-specific COCs in groundwater include dissolved metals (i.e., arsenic, iron, manganese, and sodium), pH, nitrate, and VC. VC was detected above its corresponding SL at only one Site location (MW-106) in only one of the four quarters sampled (December 2014); VC was not detected in any samples collected from hydraulically downgradient (i.e., off Site) sampling locations. Given the HBU and RME established for Site groundwater, and the restricted use status of the Site (commercial/industrial use only), protection of drinking water criteria can be used to establish the proposed CL for VC; the single exceedance identified for VC does not exceed this proposed CL. Similar to VC at the Site, nitrate was detected above its corresponding SL at only one location (MW-8) in only one of the four quarters sampled (March 2015). MW-8 is located adjacent to and hydraulically downgradient of the Site; nitrate was only detected sporadically above its RL in samples from other wells within the area of investigation. Based on the HBU and RME for Site groundwater, protection of drinking water criteria for nitrate can be used to establish the CL; the one exceedance of nitrate at MW-8 exceeds this proposed CL.

CLs are also developed for the Site-specific COCs influenced by the area-wide groundwater aquifer reducing conditions [i.e., dissolved metals (arsenic, iron, manganese, sodium) and low pH]. Based on the HBU and RME established for Site groundwater, and the restriction for land use at the Site (i.e., commercial/industrial use only), consideration of protection of drinking water criteria (primarily federal and state MCLs) is appropriate for establishing proposed CLs for these COCs. Therefore, dissolved iron and manganese CLs would be established as the state-based secondary MCLs (based on aesthetics), the dissolved sodium CL would be established based on the federal Treatment Technique Action Level MCL, and the pH CL would be based on the federal secondary MCL criteria. With respect to dissolved arsenic, although the MTCA Method A criteria for unrestricted land uses is taken into consideration as part of the proposed CL evaluation process, the Site's restriction to commercial/industrial uses makes consideration of the federal and state-based MCL appropriate as the proposed Site-specific CL for dissolved arsenic (none of the detected concentrations of dissolved arsenic exceed this proposed CL).

Based on the Site-specific CSM and the evaluation process conducted as part of this supplemental RI, the proposed points of compliance for groundwater are considered to be groundwater within the boundary of the Site and at the hydraulically downgradient edge of the Site. Monitoring at the downgradient edge of the Site will help demonstrate that potential groundwater contaminants are not leaving the Site (i.e., the extent of MSW) at concentrations above the proposed CLs. Taking into consideration the proposed cleanup standards for groundwater at the Site, the CL levels are not met for these COCs in groundwater at all locations within the Site, with the exception of the proposed dissolved arsenic CL. As noted previously, the identified aquifer reducing conditions are an area-wide condition and not limited to the within the Site itself; therefore, the proposed CLs for dissolved iron, manganese, and sodium, in addition to the pH CL, are currently exceeded at locations hydraulically upgradient, hydraulically downgradient, and within the

Site. Addressing these proposed CL exceedances given the area-wide conditions may be impracticable and other options to eliminate the potential pathway-receptor relationship (e.g., deed restriction on groundwater as a drinking water sources, etc.) will likely need to be considered.

With respect to LFG compound concentrations, based on current Site conditions (i.e., no buildings or structures), the 5.0 percent methane by volume at the Site boundary criterion [per WAC 173-304-460(2)] was established as the Site-specific SL and is also considered appropriate as the proposed CL for methane at the Site. The Site's property boundary is also considered the proposed point of compliance for methane at the Site. The concentrations of methane do not currently exceed this proposed CL at the eastern and southern boundaries of the Site. This CL is exceeded at locations within the Site, and at locations to the west, northwest, and north of the Site. However, these latter LFG probe locations are installed in areas with documented buried wood debris and the measured methane concentrations cannot readily be linked to generation by the MSW. As with the reducing aquifer conditions, the methane gas is also an area-wide issue and not solely linked to the presence of buried MSW.

Given that methane gas concentrations currently vent passively to the atmosphere at the Site, the proposed CL based on 5.0 percent methane by volume is appropriate. However, as the Site is redeveloped, a secondary CL based on the MTCA Method B CL criteria for indoor and outdoor air of 10.0 percent of the lower explosive limit (LEL; 0.5 percent methane by volume) will also be applicable to the Site pending the specifics of Site redevelopment. The point of compliance at which this secondary CL will need to be attained is in both indoor and outdoor air. The proposed cleanup standard of 5.0 percent methane by volume (the LEL) at the Site's boundary will still be applicable in areas where buildings and infrastructure are not constructed.

REMEDIAL ACTION CONSIDERATIONS

Soil

Based on the evaluation completed as part of this Supplemental RI process, no Site-specific soil COCs are identified for the Site; therefore, potential remedial action scenarios specific to Site soil contamination will likely not be evaluated. As discussed previously, the strategy for potentially addressing soil at the Site will be part of a remedial action that provides for compliance with the Site's groundwater cleanup standards and/or is designed to minimize human or environmental exposure to potentially affected soil (e.g., containment, etc.). Based on the results of the supplemental RI sampling and existing Site conditions, exposure to potentially affected soil will be managed through institutional controls/restrictive covenants that will limit activities that might expose potential receptors (i.e., commercial/industrial and/or construction workers) to the surface soil and the underlying MSW (e.g., prohibiting drinking water wells, managing excavation during redevelopment, etc.). A restrictive covenant prohibiting residential use of the

Site has previously been established for the Mill Facility parcels (Boise Cascade Corporation 2004); a similar restriction is anticipated for the Site parcel as future redevelopment strategies are finalized.

With the likelihood of future Site redevelopment, areas of potential soil contamination (and MSW) will predominately be contained over time as infrastructure (e.g., roadways, buildings, paved lots, etc.) are constructed. Potential contaminated soil may be addressed through removal to support redevelopment requirements, but not directly for soil remediation scenarios. Future redevelopment will require City permit approval (e.g., building construction, grading, subsurface work, etc.), which will help manage necessary institutional controls and deed restriction requirements. Planning for subsurface work would need to account for worker health and safety concerns and incorporate the necessary material handling and disposal requirements (as applicable), depending on the location and the depth of future excavation activities.

Groundwater

Based on the evaluation completed through this supplemental RI process, including the Site-specific groundwater COCs identified and the proposed groundwater cleanup standards for the Site, only a limited number of compounds have been identified that may require potential remedial alternative evaluation. In particular, these include dissolved metals (i.e., arsenic, iron, manganese, and sodium) and the low pH levels associated with reduced groundwater aquifer conditions. However, these reduced aquifer conditions are area-wide, and are not solely associated with potential impacts from the Site (i.e., the extent of MSW alone). The most direct approach to eliminate the catalysts that are creating these reducing conditions would be source removal (i.e., removal of the wood debris and MSW). However, given the size of the Site and the surrounding properties, as well as the volume of material involved, source removal on this scale would be impracticable and disproportionately cost prohibitive.

If dissolved metals and low pH levels need to be addressed, other alternatives will need to be considered. Based on the Site-specific CSM (identified pathways and potential receptors relationships, etc.), the proposed dissolved metals and pH CLs are based on protection of drinking water criteria. Groundwater at and downgradient of the Site will not be used as a drinking water source (based on anticipated Site-use restrictions and established City ordinance); therefore, institutional controls/deed restrictions (combined with long-term monitoring) will likely be sufficient to manage the impacts to groundwater identified at the Site.

Landfill Gas

As discussed throughout this Supplemental RI Report, potential remediation requirements to address LFG compounds (specifically methane concentrations) will be linked to the specifics of future Site redevelopment scenarios. Elevated methane concentrations are an area-wide issue and not specifically

associated with impacts from the buried MSW within the Site. Buried wood debris within the Site and on the adjacent parcels is also contributing to elevated methane concentrations measured throughout the area of investigation.

Based on existing Site conditions (e.g., no buildings or structures, etc.), no immediate remedial action to specifically address the methane concentrations is warranted. However, potential remedial alternatives selected to address the other media of concern, and potential future redevelopment scenarios could influence the LFG exposure pathways at the Site and require some level of LFG mitigation for any newly created pathways. Potential redevelopment scenarios for the Site will require City review and approval. This required review and approval process will ensure that any potential changes in LFG migration pathways that result from redevelopment will also incorporate the necessary LFG mitigation and management strategies.

Feasibility Study Considerations

Following finalization and approval of this Supplemental RI Report, a focused FS report will be prepared to evaluate potential remedial action alternatives that may be appropriate based on the Site's CSM, the identified Site-specific COCs, and their associated cleanup standards. RAOs will be established, Site units will be identified (as appropriate), and remedial technologies will be screened for potential applicability and effectiveness. As mentioned previously, traditional remedial strategies (e.g., excavation/source removal, etc.) would likely help mitigate the identified Site-specific contaminant conditions (i.e., elevated methane concentrations, reduced aquifer conditions); however, given the overall size and complexity of the Site, these strategies may be impracticable and cost prohibitive. Nevertheless, the focused FS will evaluate the various remedial technologies available to manage Site contaminant concerns as required under MTCA.

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ATTACHMENT

<u>Attachment</u>	<u>Title</u>
1	Terrestrial Ecological Evaluation

LIST OF ABBREVIATIONS AND ACRONYMS

ARAR	applicable or relevant and appropriate requirements
ASTM	American Society for Testing and Materials
BEHP	bis(2-ethylhexyl)phthalate
BGS	below ground surface
BTEX	benzene, toluene, ethyl benzene, and total xylenes
CAP	cleanup action plan
CFR	Code of Federal Regulations
City	City of Yakima
CL	cleanup level
COC	contaminant of concern
COPC	contaminant of potential concern
cPAH	carcinogenic polycyclic aromatic hydrocarbons
CRB	Columbia River Basalt
CSM	conceptual site model
CWA	Clean Water Act
CY	cubic yard
Ecology	Washington State Department of Ecology
°F	degrees Fahrenheit
FS	feasibility study
GRO	gasoline range organics
HASP	health and safety plan
HBU	highest beneficial use
HCID	hydrocarbon identification
I-82	Interstate 82
LEL	lower explosive limit
LFG	landfill gas
MCL	maximum contaminant level
MDL	method detection limit
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
Mill Facility	Former Boise Cascade Mill and Plywood Facility
MRL	method reporting limit
MSL	mean sea level
MSW	municipal solid waste
MTCA	Model Toxics Control Act
NTR	National Toxics Rule
ORP	oxidation reduction potential
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PID	photoionization detector
ppm	parts per million
PQL	practical quantitation limit
PSL	preliminary screening level
PVC	polyvinyl chloride
QAPP	quality assurance project plan
QL	quantitation limit

LIST OF ABBREVIATIONS AND ACRONYMS (CONT.)

RAO	remedial action objectives
RI	remedial investigation
RL	reporting limit
RME	reasonable maximum exposure
SAP	sampling and analysis plan
SCG	silica gel cleanup
SIM	selected ion monitoring
Site	Closed City of Yakima Landfill Site
SL	screening level
SVOC	semivolatile organic compound
TCE	trichloroethene
TDS	total dissolved solids
TEE	terrestrial ecological evaluation
TEQ	toxicity equivalency
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TPH-D	diesel-range total petroleum hydrocarbons
TPH-Dx	total petroleum hydrocarbons diesel-extended range
TPH-G	gasoline-range total petroleum hydrocarbons
TPH-O	oil-range total petroleum hydrocarbons
TSS	total suspended solids
UEL	upper explosive limit
VC	vinyl chloride
VCP	Voluntary Cleanup Program
VOC	volatile organic compound
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation
Work Plan	remedial investigation work plan
Yakima Resources	Yakima Resources, LLC

1.0 INTRODUCTION

This document presents the results of the data collected and the associated findings and conclusions for the Supplemental Remedial Investigation (RI) at the closed City of Yakima Landfill Site (Site) located in Yakima, Washington (Figure 1). The Site is located at the southern end of the former Boise Cascade Mill and Plywood Facility (Mill Facility) on the eastern edge of the City of Yakima (City). The Site is defined by the extent of the municipal solid waste (MSW) within the former landfill, including the extent of contamination associated with potential releases from the former landfill.

At the direction of the Washington State Department of Ecology (Ecology), the City entered into the Voluntary Cleanup Program (VCP) in February 2014 (VCP Project CE040; SLR 2014) and requested that Ecology review reports summarizing the results of the previous investigations conducted through 2012 relating to the Site and provide its opinion concerning the status of the RI process. Following review of the reports provided as part of the VCP application, Ecology issued an Opinion Letter regarding the Site investigation process to date (Ecology 2014). The 2014 Opinion Letter indicated that characterization of soil and groundwater at the Site was insufficient to support the selection of a cleanup action, and that additional investigation was needed to complete the RI for the Site. Specific data gaps identified in Ecology's Opinion Letter include the following:

- The potential presence and associated lateral and vertical extent of soil contamination at the Site has not been fully investigated.
- The extent of MSW along the eastern edge of the Site has not been fully identified and potential methane concentrations have not been assessed in this area.
- The lateral and vertical extent of groundwater contamination at the Site has not been fully characterized and four consecutive quarters of groundwater sampling and analysis is recommended to effectively support Site groundwater characterization.
- A terrestrial ecological evaluation (TEE) is required for the Site (Ecology 2014).

Based on the data gaps identified in Ecology's 2014 Opinion Letter, an RI work plan (Work Plan) was prepared and submitted for Ecology's approval. The Work Plan outlined the planned approach for further investigation at the Site to address Ecology's identified data gaps and complete the RI (Landau Associates 2014). This Work Plan was developed to meet the requirements for an RI as defined by the Washington State Model Toxics Control Act (MTCA) Cleanup Regulation [Washington Administrative Code (WAC) 173-340-350]. The Work Plan described the RI activities to be performed, and included a schedule for data collection, evaluation, and reporting. The Work Plan, which was submitted to Ecology, set the basis for the investigative, analytical, data evaluation, and reporting activities documented in this Supplemental RI Report. As requested in Ecology's 2014 Opinion Letter, a Site-specific Sampling and Analysis Plan (SAP); a Quality Assurance Project Plan (QAPP); and a Site Health and Safety Plan (HASP)

were prepared to support management of RI activities; these plans are included with this report as Appendices B, C, and D, respectively.

The following activities have been completed at the Site for the supplemental RI:

- September 2014:
 - Drilling of ten soil borings (i.e., SB-100 through SB-109), including collection of soil samples for chemical analyses
 - Completion of the ten borings as groundwater monitoring wells (i.e., MW-100 through MW-109)
 - Collection of water level measurements from 28 Site-wide groundwater monitoring wells
 - Collection of groundwater samples for chemical analyses from 24 Site-wide groundwater wells, including the 10 newly installed wells.
- October 2014:
 - Further investigation of the extent of MSW along the northeastern and eastern edges of the former Landfill Parcel
 - Installation of four new landfill gas (LFG) probes (i.e., GP-23 through GP-26), including collection of soil samples for chemical analyses during drilling for probe installation.
- December 2014:
 - Collection of water level measurements from 29 Site-wide groundwater monitoring wells
 - Collection of groundwater samples for chemical analyses from 26 Site-wide groundwater wells
 - Site-wide LFG probe survey
 - Ongoing evaluation of Site-wide drainage and surface water infrastructure.
- January 2015:
 - Site-wide LFG probe survey.
- March 2015:
 - Collection of water level measurements from 29 Site-wide groundwater monitoring wells
 - Collection of groundwater samples for chemical analyses from 26 Site-wide groundwater wells.
- April 2015:
 - Collection of soil samples for chemical analysis during installation of four new LFG probes (GP-28 through GP-31) along the eastern edge of the Site¹

¹ Planned LFG probe location GP-27 could not be installed because of access constraints; one soil sample was collected for chemical analysis in the vicinity of from the planned location.

- June 2015:
 - Collection of water level measurements from 29 Site-wide groundwater monitoring wells
 - Collection of groundwater samples for chemical analyses from 26 Site-wide groundwater wells.
 - Site-wide LFG probe survey.

This Supplemental RI Report provides an overview of historical investigations and completed RI activities, discusses findings based on the data collected and analyzed, and provides conclusions and recommendations relevant to the selection of a remedial action for the Site consistent with MTCA.

2.0 SITE BACKGROUND AND HISTORY

This section provides an overview of the history of the Site and its vicinity. As mentioned previously, the Site is the location of the closed City of Yakima Landfill that is defined by the extent of the MSW within the former landfill, including the extent of contamination associated with potential releases from the former landfill. The former landfill covers an area of approximately 33 acres and is located across portions of three parcels, consisting of the approximately 38-acre Landfill Parcel (19131841001; owned by the Boise Cascade Corporation²), an approximately 15.5-acre parcel (19131842001; owned by the LeeLynn, Inc. and Wiley Mt., Inc.), and an area adjacent to Interstate 82 (I-82) that is owned and maintained by the Washington State Department of Transportation (WSDOT; Landau Associates 2013).

Between 1963 and 1970, the City operated an MSW landfill at the Site. As part of landfill operations, MSW was placed in a former log pond that originally occupied the Site (City of Yakima 1996). By the time landfill operations ceased in 1970, the MSW was covered and the area brought to grade with a mixture of fill soil and wood debris. The Site was then used until 2010 for log storage, including temporary log storage and log chipping operations by the tenant of the Landfill Parcel, Yakima Resources, LLC (Yakima Resources).

The Site is currently primarily covered with wood debris and various mixtures of reclaimed bark, fines, and rock. Vegetation has started to reclaim some areas of the Site. The Site is situated at an elevation of approximately 1,070 feet above mean sea level (MSL), sloping slightly to the east and southeast, toward the Yakima River (which is located approximately 600 feet to the east, beyond I-82).

² Boise Cascade Corporation is listed on the Yakima County Assessor's website as the current property owner. The City understands that Boise Cascade Corporation became OfficeMax and is currently Office Depot, Inc.

3.0 PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

Since 1998, several investigations have been conducted that focused on the environmental conditions at or in the vicinity of the Site. Previous investigations have included assessment of soil, soil vapor/LFG, and groundwater; historical investigation locations completed prior to this supplemental RI in the vicinity of the Site and the current groundwater monitoring well network are shown on Figures 2 and 3, respectively. Results from each investigation are discussed in the sections that follow based on the information available for review at the time this Supplemental RI Report was prepared; results of the various investigations are summarized in Appendix A, as available. A general summary of each of the previous investigations is presented below.

3.1 INTERSTATE 82 OFF-RAMP CONSTRUCTION AND MUNICIPAL SOLID WASTE REMOVAL (1996)

In early 1996 during the construction of an off-ramp for the I-82 Gateway Project, MSW was encountered at the extreme southeastern edge of the Site. WSDOT, in coordination with Ecology, evaluated the necessity to remove all or a portion of the identified MSW for construction of the off-ramp. Ultimately it was determined that the off-ramp could be constructed on top of the MSW, if the material was determined to be suitable to support the construction. However, approximately 2,000 cubic yards (CYs) of MSW was removed for construction-stability purposes and to allow for installation of a buried 42-inch-diameter drainage pipe beneath the off-ramp that discharges east of I-82 into the Yakima River. The removed MSW was disposed of at the Terrace Heights Landfill (CH2M Hill 1996).

3.2 1998 HYDROGEOLOGIC STUDY

In 1998, an investigation was conducted by Landau Associates to assess the hydrogeologic conditions within the general area of the Mill Facility. The investigation included the installation and monitoring of six groundwater monitoring wells (designated MW-5 through MW-10), and the monitoring of four existing groundwater monitoring wells (MW-1 through MW-4³); the latter four wells were originally installed to evaluate groundwater conditions at a wood waste landfill established at the northeastern corner of the Mill Facility in 1990 (Boise Cascade 1990). The groundwater well locations are shown on Figure 3; monitoring well construction logs are provided in Appendix E.

The monitoring wells noted above were installed near, but not within the boundaries of the Site (i.e., within the boundaries of the MSW). The results of the investigation indicated that the direction of the

³ As of the start of RI activities (i.e., September 2014), MW-2, MW-3, and MW-4 could no longer be located/identified and are presumed to be either buried under debris or destroyed.

shallow groundwater flow in the area of investigation was consistently from the northwest to the southeast, toward the Yakima River. Landau Associates measured pH in groundwater on July 29, 1998; pH concentrations ranged from 6.54 to 7.08. The lowest pH concentrations were detected at wells located to the northwest or north (and hydraulically upgradient) of the Site; investigation results are summarized in Table A-1 (Landau Associates 1998).

3.3 2008 SUBSURFACE INVESTIGATION

In 2008, Parametrix conducted a subsurface investigation that included the Site and adjacent parcels on the Mill Facility. The objectives of the investigation were to assess groundwater conditions beneath the area, to estimate the extent of the MSW, and to assess the potential for soil vapor (i.e., methane) generation and migration. The investigation included conducting a geophysical survey; excavating 14 test pits; advancing 2 soil borings; installing a new groundwater monitoring well (MW-9A) to replace MW-9 (a well that had gone dry); installing 3 soil vapor probes (GP-1, GP-2, and GP-3); collecting groundwater samples for analysis from wells MW-7, MW-8, and MW-9A; and collecting soil vapor samples from the soil vapor probes and from wells MW-7, MW-8, MW-9, and MW-9A for methane analysis (Parametrix 2008). The approximate locations of the Parametrix investigations are shown on Figures 2 and 3. Monitoring well construction logs, exploratory test pit logs, and LFG probe logs are provided in Appendices E, F, and G, respectively.

The groundwater samples were analyzed for total petroleum hydrocarbons (TPH) in the gasoline-, diesel-, and oil-ranges (TPH-G, TPH-D, and TPH-O, respectively); for benzene, toluene, ethylbenzene, and total xylenes (BTEX); and for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), total and dissolved metals, and conventionals (i.e., anions). The methane concentrations at soil vapor probes GP-1 and GP-3 exceeded the upper explosive limit (UEL; 15 percent by volume) (Parametrix 2008). The analytical data from the 2008 Parametrix investigation is presented in Table A-2⁴.

3.4 2009 REMEDIAL INVESTIGATION

In 2009, SLR conducted an RI at the Site to assess potential environmental conditions that would require remedial action under MTCA (SLR 2009). The 2009 RI activities consisted of the following:

- Test pits TP-8 through TP-63 were excavated to delineate the lateral extent of the MSW (test pit locations are shown on Figure 2). Test pit logs are included in Appendix F.

⁴ The Parametrix investigation data is presented as provided directly from the investigation report (Parametrix 2008).

- Soil borings SB-1 through SB-41 were advanced to define the MSW thickness and geometry relative to native soils, fill, wood debris, and the groundwater table (soil boring locations are shown on Figure 2). Soil boring logs are included in Appendix H.
- Groundwater samples were collected from borings SB-11, SB-13, SB-16, SB-18, and SB-19 to evaluate groundwater quality immediately beneath the landfill (these groundwater grab samples were considered leachate samples).
- Soil vapor probes GP-4 through GP-18 were installed; these probes and existing probe GP-3 were monitored to evaluate the extent of methane in subsurface soils (the probe locations are shown on Figure 4). Soil vapor/LFG probe logs are included in Appendix G.
- Groundwater monitoring wells MW-11, MW-12, and MW-13⁵ were installed, and groundwater samples were collected from these new wells and existing wells MW-7, MW-8, and MW-9A to further evaluate the groundwater flow direction beneath the landfill area and the groundwater quality upgradient and downgradient of the landfill. The groundwater samples were analyzed for TPH-G, TPH-D, TPH-O, VOCs, SVOCs, PCBs, dissolved metals, conventionals (i.e., anions), and pH. Monitoring well construction logs are included in Appendix E.

Groundwater analytical results for metals, VOCs, and conventionals are included in Appendix A-3; soil vapor/LFG investigation results are presented in Appendix A-4. According to the SLR RI report, no VOCs or SVOCs were detected in groundwater samples at concentrations above the screening levels (SLs) or method reporting limits (MRLs) used specifically for the 2009 investigation. Methane concentrations detected in soil vapor ranged from 0 to 58.5 percent (SLR 2009).

3.5 2009–2010 ADDITIONAL INVESTIGATION

Between November 2009 through February 2010, SLR completed an additional investigation at the Site to: 1) evaluate sources and seasonal variations of methane in soil vapor, 2) identify the sources of the groundwater contaminants, 3) delineate the downgradient (south-southeast) extent of the impacted groundwater, 4) characterize any seasonal variations in groundwater flow direction and contaminant concentrations, and 5) assess the hydraulic interactions between shallow groundwater and the Yakima River (SLR 2010). The work consisted of the following activities:

- Soil vapor probes GP-19 through GP-22 were installed and two soil vapor sampling events were conducted in November 2009 and February 2010 for methane analysis (locations of these probes are shown on Figure 4; soil vapor/LFG probe logs are included in Appendix G).
- Installation of groundwater monitoring wells MW-14 through MW-18 (see Figure 3); monitoring well construction logs are included in Appendix E.
- Four gauging stations RG-1 through RG-4 were marked and surveyed on the west bank of the Yakima River (see Figure 3).
- Groundwater sampling events were conducted in November 2009 and February 2010 that included the wells associated with the Site (i.e., MW-7, MW-8, MW-9A, and MW-11 through

⁵ MW-13 was destroyed in early 2013 during Mill Facility demolition activities. Newer monitoring well FPP-MW-3 was placed, in part, as MW-13's replacement.

MW-18) and surface water samples from the Yakima River at locations upstream of the Site. The groundwater samples were analyzed for the preliminary groundwater contaminants of potential concern (COPCs), including vinyl chloride (VC), nitrate, pH, and dissolved arsenic, sodium, iron, and manganese, as well as additional conventional parameters (i.e., calcium, chloride, sulfate, magnesium, and alkalinity).

Methane concentrations detected in soil vapor samples ranged from 0 to 77.7 percent. VC was not detected in any of the groundwater samples analyzed. Groundwater, soil vapor/LFG, and surface water investigation results are included in Appendices A-3, A-4, and A-5, respectively.

3.6 WOOD DEBRIS REMOVAL

In 2010, Yakima Resources removed a large volume of wood debris from the area to the northeast of the Site and south of the BNSF Railway railroad tracks, including wood debris that was on top of the known extent of MSW. Although not considered a remedial action, the removal of the wood debris may have reduced the volume of material influencing the production of LFG in this area. The removal of the wood debris reduced the relative elevation of the ground surface in this area by up to 15 feet in some locations. The extent of MSW in the northeastern corner of the Site was further investigated in October 2014 as part of the supplemental RI (discussed further in Section 4.4).

3.7 2012 SOIL VAPOR AND GROUNDWATER SAMPLING EVENT

In May 2012, SLR conducted a soil vapor and groundwater sampling event to assess conditions associated with higher seasonal groundwater elevations (SLR 2012). The soil vapor sampling event included the sampling of the remaining soil vapor probes that were installed in borings (GP-3 through GP-20⁶) for methane analysis (see Figure 4 for locations). Groundwater samples were collected from MW-7, MW-8, MW-9A, and MW-11 through MW-18 (see Figure 3 for well locations). In the northeastern portion of the Site where wood debris was removed in 2010, the methane concentrations detected in May 2012 were lower than previous results (see Section 3.6). VC was not detected in the groundwater samples analyzed. Investigation results are summarized in Appendices A-3 and A-4; monitoring well construction logs and LFG probe logs are included in Appendices E and G, respectively.

3.8 2013 PHASE II – FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS

In June 2013, Landau Associates conducted a Phase II investigation at parcels located immediately adjacent to the northwest and hydraulically upgradient of the Site (Landau Associates 2013). The purpose

⁶ GP-21 and GP-22 were accidentally destroyed by ongoing property operations.

of the investigation was to evaluate and document environmental conditions to assess potential releases related to historical Mill Facility operations (located hydraulically upgradient of the Site). Investigation activities included the following:

- Soil borings were advanced at 48 locations for selected soil and groundwater sampling and analysis.
- Five additional monitoring wells were installed.
- Two rounds of groundwater sampling and analysis were conducted, including the initial sampling of temporary wells installed in soil borings plus sampling of two existing groundwater monitoring wells, and a supplemental sampling of additional temporary wells and the five new monitoring wells.
- Surface water samples (i.e., standing water) were collected and analyzed from three locations.
- Shallow soil gas samples were collected and analyzed from four locations.
- Two wood debris samples were collected and analyzed from one location.
- Samples were selectively analyzed for some or all of the following constituents: TPH-G, TPH-D, TPH-O, VOCs, SVOCs, PCBs, metals, total suspended solids (TSS), pH, and total organic carbon (TOC).

The results of the Phase II investigation identified contaminants of concern at concentrations above the SLs, which were based on applicable regulatory criteria, including TPH-D and TPH-O in soil and groundwater, and dissolved metals in groundwater. Specifically, the findings included:

- TPH-O and TPH-D concentrations exceeded the soil and groundwater SLs specific to the 2013 Phase II investigation in samples collected within the former Plywood Plant parcels only (northwest and hydraulically upgradient of the Site).
- Dissolved arsenic, iron, manganese, and sodium were detected in several groundwater samples at concentrations greater than the SLs used specifically for the investigation. The highest percentage of these dissolved metals was identified in samples collected from within the former Plywood Plant parcel. Dissolved metals (with the exception of dissolved manganese) were detected to a lesser degree in the samples collected in the Triangular Parcel (located north of the BNSF Railway tracks and hydraulically upgradient of the Site).

Analytical results from this two-part investigation are summarized in Appendices A-6 through A-10; monitoring well construction logs and soil boring logs are included in Appendices E and H, respectively.

4.0 REMEDIAL INVESTIGATION ACTIVITIES (2014-2015)

As discussed previously, in its 2014 Opinion Letter, Ecology indicated that further investigation of Site soil, LFG, and groundwater was necessary to evaluate and document the nature and extent of contamination and complete the RI for the Site (Ecology 2014). The activities conducted as part of the supplemental RI program were developed to address the data gaps identified by Ecology in its 2014 Opinion Letter, and to collect the additional data required to support the evaluation of remedial action alternatives and the selection of a final remedial action for the Site, as appropriate based on the results of the supplemental RI discussed in this document. This section presents the scope of the completed supplemental RI activities; the results and findings of these activities are discussed in the later sections of this document.

4.1 INVESTIGATION SUPPORT ACTIVITIES

The activities summarized below were coordinated, as necessary, by Landau Associates representatives as part of the supplemental RI scope of work.

- Access for the supplemental RI activities was coordinated with the Site owner (Boise Cascade Corporation/Office Depot, Inc.) and current Site tenant (Yakima Resources). Landau Associates provided advance notice to Yakima Resources representatives (a minimum of 5 days) prior to access for the scheduled field activities to reduce potential impacts to their ongoing operations.
- Access agreements were completed with offsite property owners for the planned investigation activities outlined in the Work Plan. Access was coordinated with the City for additional investigation to the south of the Site, and an access agreement was established with WSDOT for additional investigation along the I-82 corridor.
- Public and private utility locators were contacted during each round of investigation, as applicable, to identify and mark any utilities within 100 feet of the planned investigation locations. Site visits were conducted in advance of the soil boring/groundwater sampling to identify locations for further investigation and support the required utility locates.
- Daily health and safety meetings were conducted between Landau Associates representatives and the onsite subcontractors specific to the planned RI activities. The Site-specific HASP that was prepared for the supplemental RI activities is included as Appendix D.
- Landau Associates and the identified subcontractors checked in daily with Yakima Resources at their administrative office in the former Mill Facility and relayed plans for the day's activities. The field crews also checked out with Yakima Resources administrative staff at the end of daily activities, when appropriate.
- An updated survey of the existing groundwater well network (including wells installed for the supplemental RI) was conducted as part of the evaluation of Site groundwater conditions.

4.2 SOIL INVESTIGATION

The following section summarizes the strategy to further investigate soil quality at the Site; supplemental soil investigations were conducted in September 2014 (groundwater well installation) and in October 2014 and April 2015 (LFG probe installation). The section includes the approach for boring advancement within the known extent of solid waste and in locations hydraulically upgradient and downgradient of the Site. The laboratory analytical program used to evaluate the collected soil samples is also discussed. Soil boring logs are provided in Appendix H.

4.2.1 SOIL BORINGS WITHIN THE EXTENT OF MUNICIPAL SOLID WASTE

Historically, numerous borings and test pits were advanced into and through the MSW to evaluate the vertical and lateral extent of the former landfill. As part of the supplemental RI activities documented in this report, seven borings (i.e., SB-102 through SB-108/MW-102 through MW-108) were advanced at locations within the known extent of MSW to evaluate soil conditions above and below the MSW (see Figure 3). These soil borings were advanced to an approximate depth of 25 feet below ground surface (BGS) to provide sufficient depth for the subsequent construction of permanent groundwater monitoring wells (see Section 4.3). Drilling through MSW can create a risk for drawdown of contaminants from the MSW into or through underlying less permeable soil layers that may be acting as barriers to vertical contaminant migration. Therefore, the borings advanced through the MSW used step-down drilling methodologies to limit the potential for contaminant drawdown during drilling. Details regarding the step-down drilling methodology are included in the SAP provided in Appendix B.

An environmental professional from Landau Associates supervised the drilling and sampling activities. Soil samples collected during drilling were visually described in the field in general accordance with ASTM International (ASTM) D2488-09a, *Standard Recommended Practice for Description of Soils (Visual-Manual Procedure)*. Subsurface conditions were described and recorded from soil recovered in California split-spoon soil samplers advanced at approximately 2.5-foot intervals. Environmental field screening was conducted at each boring location to evaluate the potential presence of contamination. Field-screening results [e.g., obvious signs of contamination such as staining or discoloration, photoionization detector (PID) readings, headspace analysis, etc.] were recorded on the exploration log. Headspace analyses were conducted by placing a representative portion of the soil in a sealable plastic bag, allowing the soil to volatilize inside the sealed container for five (5) minutes, then inserting the PID tip into the bag to measure total VOCs.

Two soil samples were collected from each boring location for laboratory analyses, with the exception of SB-103, as described below. Soil samples were collected for analyses based on the procedures outlined in the SAP included in Appendix B. One soil sample was collected near the ground surface

(approximately 1 to 3 feet BGS) and above the MSW at each boring location. Much of the surface of the former landfill is covered with a mix of soil and wood debris. The depths for collection of the near surface soil samples were determined in the field based on the presence/absence of wood debris and the availability of sufficient soil volume for sample collection, as appropriate. Insufficient soil volume because of the presence of wood debris prevented the collection of a soil sample above the MSW at SB-103.

The second/deeper soil sample collected for analysis at each boring location was from a depth below the MSW interface; no MSW samples were collected for analyses. As noted previously, seasonal groundwater fluctuates through the MSW at several locations within the Site; therefore, these deeper soil samples collected beneath the MSW interface were wet at several sampling locations.

4.2.2 ADDITIONAL SOIL BORINGS

Two soil borings were advanced at locations to the north/relatively upgradient of the MSW (i.e., SB-100, SB-101), and one boring was advanced at a location to the south/relatively downgradient (i.e., SB-109) of the known extent of the MSW (see Figure 3). At these three boring locations, soil samples were collected at 2.5-foot intervals using a California split-spoon sampler and evaluated using field-screening techniques for indications of the likelihood of contamination, as discussed in the SAP (Appendix B).

Only one soil sample was collected from each relatively hydraulically upgradient boring (i.e., SB-100, SB-101) for subsequent laboratory analysis because of the presence of wood debris and insufficient soil volumes in the shallow sections of these borings. The soil samples collected for analysis from these borings were from directly above the elevation of the groundwater table, as identified at the time of drilling. Two soil samples were collected for laboratory analysis from boring SB-109, located to the south of the Site. The two samples were selected from the depth intervals that indicated evidence of potential for contamination, based on field screening and observations at the time of drilling. These samples included a relatively shallow soil sample and one collected from just above the groundwater table.

4.2.3 LABORATORY ANALYSIS

Shallow soil samples collected from borings within the extent of MSW, as noted above, were analyzed based on the analytical schedule presented in Table 1. In general, shallow soil samples were screened by the laboratory using the hydrocarbon identification (HCID) method and subsequently analyzed for TPH-G and/or TPH-diesel-extended range organics (TPH-Dx⁷), based on the HCID result⁸. For those

⁷ TPH-Dx analysis includes both diesel- and oil-range organics evaluation.

⁸ Only one shallow soil sample collected at SB-106 had a positive initial HCID screen for TPH-G.

samples with positive HCID results for diesel- and/or oil-range organics, subsequent TPH-Dx analysis was performed with and without silica gel cleanup (SGC). The shallow soil samples collected from the MSW borings were also analyzed for metals, polycyclic aromatic hydrocarbons (PAHs), and conventionals (i.e., fluoride, nitrate, and nitrite). The shallow soil sample collected from the boring to the south of the Site (i.e., SB-109) was also analyzed for hexavalent chromium, chlorinated pesticides, PCBs, VOCs, and SVOCs. As noted previously, no shallow soil sample was collected at the two relatively hydraulically upgradient boring locations (i.e., SB-100, SB-101) because of insufficient soil volume.

The deeper soil samples, whether just above the elevation of the groundwater table (locations SB-100, SB-101, SB-109) or beneath the extent of MSW (SB-102 through SB-108), were also analyzed as indicated in Table 1. These samples were also analyzed using the HCID method with follow-on analysis based on the result of the initial HCID screen; subsequent TPH-Dx analysis, if required, was conducted with and without SGC. The deeper soil samples were also analyzed for metals (including hexavalent chromium), chlorinated pesticides, PCBs, VOCs, SVOCs, conventionals (i.e., fluoride, nitrate, and nitrite), and pH. Some analyses were completed outside the method-recommended laboratory holding time, because of either issues at the laboratory or an additional analysis was requested past the holding time, as indicated in Table 1. Results of the soil analysis are discussed in further detail in Section 7.1.

4.3 GROUNDWATER INVESTIGATION

The following section summarizes the construction of the new groundwater monitoring wells and the approach for groundwater sampling and characterization.

4.3.1 NEW GROUNDWATER WELL CONSTRUCTION

The ten soil borings discussed in Section 4.2 were completed as monitoring wells, subsequent to drilling and soil sample collection. The new groundwater monitoring wells were constructed with 2-inch-diameter, schedule 40 polyvinyl chloride (PVC) casings. The seven borings advanced within the footprint of the MSW (i.e., MW-102 through MW-108) were completed with 5 foot screens (0.010 machine slot size) installed beneath the MSW and across the elevation of the groundwater table, where possible. The groundwater elevation at several of the well locations was within the MSW; at these locations the new wells were screened below the bottom of the MSW identified at the time of drilling. The relatively upgradient and downgradient locations (i.e., MW-100, MW-101, and MW-109) were constructed with 10 foot screens (0.010 machine slot size), positioned across the elevation of the groundwater table, as identified at the time of drilling.

The new monitoring wells were developed at the time of construction; groundwater samples were collected at least 72 hours after well development as outlined in the SAP (Appendix B). Well construction logs are provided in Appendix E.

4.3.2 GROUNDWATER ELEVATION CONTOURING

Prior to sample collection, the depth to groundwater was measured at each of the Site monitoring wells. The depth to water measurements were collected as close in relative time to one another as possible to provide a representative “snapshot” of Site-wide groundwater elevations for use in evaluating the direction of groundwater flow. Depth-to-groundwater was measured from a surveyed reference point on each well casing and the measured depths were converted to elevations to evaluate groundwater flow direction at the site⁹. Relative river surface elevations were also measured at the four river gauges (i.e., RG-1 through RG-4) located on the east side of I-82 along the Yakima River.

The measured depth-to-groundwater and corresponding groundwater elevation data for the completed four quarters of monitoring are presented in Tables 2A through 2D, respectively. The horizontal and vertical locations of the Site monitoring wells, including the ten new groundwater wells constructed in September 2014, were surveyed in October 2014. The survey data are also presented in Tables 2A through 2D. The groundwater elevations were plotted on maps and contours were prepared for the four quarters of groundwater sampling (Figures 5 and 6). Site groundwater dynamics are discussed further in Section 5.3.

4.3.3 GROUNDWATER SAMPLING AND FREQUENCY

Four quarters of groundwater sampling were completed as part of the supplemental RI activities (September and December 2014, and March and June 2015). In September 2014, 10 new and 14 existing groundwater monitoring wells within and in the vicinity of the Site were monitored and sampled. The December 2014, March 2015, and June 2015 rounds included the 24 wells monitored and sampled in September, plus 2 wells located to the northwest of the Site within the Former Plywood Plant parcel (i.e., FPP-MW-1 and FPP-MW-2). These latter two wells were added into the monitoring program to further evaluate hydraulically upgradient TPH contamination identified in this area during the September 2014 monitoring event (see Section 7.2.1 for further information).

As outlined in the Work Plan and as requested in Ecology’s 2014 Opinion Letter, groundwater samples were collected for four consecutive quarters at the Site. Groundwater samples for chemical

⁹ Depth-to-groundwater measurements were also collected at MW-1, MW-5, and MW-10; no groundwater samples for chemical analysis were collected from these wells.

analysis were collected based on the procedures and methodologies presented in the SAP and QAPP (Appendices B and C, respectively).

4.3.4 LABORATORY ANALYSIS AND CONTAMINANTS OF CONCERN

The groundwater samples collected during the four quarters of sampling (i.e., September and December 2014, and March and June 2015) were analyzed based on the analytical schedule and the laboratory methods presented in Tables 3A through 3D, respectively. Data quality objectives and data management procedures are discussed in the QAPP, included as Appendix C.

As with the soil sampling strategy discussed in Section 4.2, the majority of the groundwater samples were initially analyzed for the potential presence of petroleum hydrocarbons using the HCID method; any subsequent TPH-Dx analysis was conducted with and without SGC. Samples were also analyzed for total and dissolved metals, chlorinated pesticides, PCBs, VOCs, SVOCs, PAHs, conventionals [i.e., fluoride, nitrate, nitrite, chloride, sulfate, alkalinity, bicarbonate, ammonia, TOC, and total dissolved solids (TDS)], as indicated in Tables 3A through 3D. Based on the absence of concentrations above the laboratory reporting limits (RLs) during the September 2014 sampling event and issues surrounding its required short holding time, hexavalent chromium was removed from the analyte list for the subsequent three quarterly rounds pursuant to Ecology approval. The analytical results for the four quarterly groundwater monitoring rounds are discussed in Section 7.2.

4.4 EXTENT OF MUNICIPAL SOLID WASTE INVESTIGATION

As noted in Section 1.0, Ecology requested additional investigation to evaluate and document the extent of MSW along the eastern boundaries of the Site (Ecology 2014). Additional data was also needed to document the boundary of the MSW along the northeastern edge of the Site where wood debris has been removed since the initial RI (SLR 2009) and the relative ground surface elevation has been reduced by almost 15 feet in some locations (see Section 3.6). Therefore, supplemental investigation into the extent of the MSW included explorations along the northeast and eastern boundaries of the Site.

To support this investigation, test pits were advanced between October 27 and 28, 2014 using an excavator to depths between 7 and 13 feet BGS, based on access and field conditions. The locations where the test pits were advanced are shown on Figure 4. Landau Associates representatives logged the conditions of soil and MSW encountered during the test pit excavations; test pit field logs are provided in Appendix F.

The test pit investigation showed that MSW was present as shallow as 1 foot BGS and as deep as 12 feet BGS in the areas investigated in October 2014 (see Figures F-72 through F-85; Appendix F). The test pits were advanced in a step-out pattern until MSW was no longer identified. The extent of the MSW, based on historical investigation and the work completed in October 2014, is shown on Figure 4. The only

area where further MSW evaluation could not be completed was the far northeastern corner of the Site because of the presence of surface water associated with the historical irrigation channel and current drainage patterns. However, given the results of the additional MSW investigation conducted adjacent to this area, it is unlikely that the MSW extends farther than the inferred area shown on Figure 4.

4.5 LANDFILL GAS PROBE SURVEYS

Once the extent of MSW investigation (i.e., test pit exploration program) discussed in Section 4.4 was completed, and the lateral extent of MSW along the northeastern and eastern edges of the Site was better defined, two permanent LFG probes (i.e., GP-25 and GP-26) were installed in October 2015 along the newly defined northeastern boundary of the MSW. Two additional LFG probes were also installed to replace damaged probes GP-21 and GP-22; the locations for these replacement probes (i.e., GP-23, GP-24) are shown on Figure 4. In April 2015, after the access agreement was finalized with WSDOT, four additional LFG probes were installed along the eastern edge of the Site (along the I-82 easement). A planned fifth LFG probe (i.e., GP-27) could not be installed because of access constraints for the drill rig and seasonal access issues related to fluctuating surface water volumes in that area; however, a soil sample was collected for chemical analysis from the planned GP-27 location. To the extent possible, the new LFG probes were installed a minimum of 15 feet from the lateral extent of MSW (see Figure 4), as outlined in the Work Plan (Landau Associates 2014).

The eight new LFG probes (i.e., GP-23 through GP-26, and GP-28 through GP-31) were installed using hollow-stem auger methods and soil samples were collected on a continuous basis during drilling using a California split-spoon sampler. Soils encountered during boring advancement were logged by Landau Associates personnel. Soil samples were collected for analysis based on the methodology and approach discussed in Section 4.2 and as identified for the deeper (below MSW) samples collected from borings MW-102 through MW-108, and as outlined in Table 1. However, only one soil sample was collected for analysis from each boring advanced for LFG probe construction at the soil interval directly above the groundwater table. To the extent possible, the LFG probes were constructed with the bottom of their screens a minimum of 5 feet above the seasonal high groundwater elevation; however, groundwater elevations at the time of drilling for the eastern LFG probes (i.e., GP-28 through GP-31) were extremely high and the planned separation of the bottom of the screen from the groundwater table could not always be achieved. LFG probe construction logs are presented in Appendix G. Soil analytical results from the LFG probes installed in October 2014 and April 2015 are discussed in Section 7.1; an insufficient volume of soil was available from the boring for GP-25 for chemical analysis.

In both December 2014 and January 2015, the existing LFG probe network (GP-1 through GP-9 and GP-11 through GP-20) and the LFG gas probes installed in October 2015 (i.e., GP-23 through GP-26)

were sampled. To the extent possible, LFG concentrations of methane, oxygen, carbon monoxide, carbon dioxide, hydrogen sulfide, and hydrogen were measured during the LFG probe surveys¹⁰.

During completion of the December 2014 gas probe survey, several issues arose that affected the accuracy and representativeness of the survey's results. Since the entire network was installed over the years by varying contractors, the varying casing sizes and port adaptors made it problematic to obtain an effective seal and representative sample results at the various locations. New LFG probe caps/sampling ports were constructed, based on each probe's specific construction, to help ensure that an effective seal was obtained prior to sample collection and a subsequent survey was conducted in January 2015.

An additional LFG survey was conducted concurrent with the fourth quarter groundwater sampling event in June 2015, including sampling of the new LFG probes installed in April 2015 (i.e., GP-28 through GP-31). The results from the January and June 2015 LFG surveys are discussed in Section 7.3.

¹⁰ A CES/Landtec GEM-2000 Plus multi-gas meter or similar meter was used.

5.0 ENVIRONMENTAL SETTING

This section summarizes information regarding the physical setting of the Site, based on the investigations conducted to date, including information on Site geology, hydrogeology, surface water/drainage, natural resources, and the extent of the MSW.

5.1 PHYSICAL CONDITIONS

The following section provides information on the physical setting of the Site, including geography, climate, topography, land use, and the extent of MSW.

5.1.1 GEOGRAPHY AND CLIMATE

The Site is located within the Yakima River Valley of central Washington in Township 13N, Range 19E Willamette Meridian, and in the west-central portion of Section 18 at the eastern edge of the City. The Site (as defined by the extent of MSW) is located across portions of three parcels, consisting of one approximately 38-acre parcel (19131841001; owned by Boise Cascade Corporation/Office Depot, Inc.), a second approximately 15.5-acre parcel (19131842001; owned by the LeeLynn, Inc. and Wiley Mt., Inc.), and an area adjacent to I-82, owned and maintained by WSDOT (Landau Associates 2013).

The Site is currently zoned as a Regional Development District (high visibility areas that provide regional commerce, office campus, recreation, large-scale retail, etc.); future land use is zoned Regional Commercial (a new category supporting a mix of retail, services, and business establishments) (City of Yakima 2015). Areas surrounding the Site are zoned primarily as single- and two-family households and light industrial. The Site is located just outside the mapped floodplain of the Yakima River and immediately west of I-82 (Yakima County GIS website 2015).

Average daily high temperatures for the City range between 36° Fahrenheit (°F) and 88°F, with an annual average high temperature of 63.2°F. Average daily lows range between 21°F and 53°F, with an average annual low temperature of 36.2°F. The overall average temperature for the City is approximately 50°F. The average rainfall is 8.35 inches per year; the City's average snowfall is 23 inches per year (usclimatedata website 2015).

5.1.2 TOPOGRAPHY AND SURFACE COVER

The Site is relatively flat and has an average elevation of 1,070 feet above MSL with a slight downward slope to the southeast (Landau Associates 2013). An active railroad track trends from east to west along the northern edge of the Site. The ground surface at the Site is primarily covered with a mixture of wood debris and soil, with a few areas of sparse vegetation.

Until May 2010, logs were stored over a large area of the Site and de-barking and chipping operations were conducted along the northwestern edge of the Site. Prior to 2010, between 1 and 9 feet of sandy silt and/or silty gravel was placed over the ground surface in many areas of the Site along with approximately 1 to 10 feet of wood debris. In many locations, up to 10 feet of wood debris covers the MSW (SLR 2009, 2010).

5.1.3 LAND USE

As noted previously, the area of the Site used for former landfill operations was initially developed as a log pond by the Boise Cascade Corporation (now Office Depot, Inc.). From approximately 1963 to 1970, MSW was deposited into the former log pond. After closure of the landfill, the Site was used as a log storage deck until mill operations were ceased. Presently, the Site is covered with a mixture of soil and wood debris, mostly in the form of wood chips.

5.1.4 EXTENT OF MUNICIPAL SOLID WASTE

Since 2008, several investigations have been conducted to evaluate the lateral and vertical extent of MSW at the Site. Based on investigations conducted between 2008 and 2009, the estimated volume of MSW is approximately 440,000 CYs across approximately 33 acres. At the Site, the MSW has a maximum thickness of 15 feet, but averages about 10 feet in thickness (SLR 2009, 2010).

Ecology's 2014 Opinion Letter stated that additional investigation was needed to document the extent of the MSW along the northeastern and eastern boundaries of the Site (Ecology 2014). Therefore, as discussed in Section 4.4, additional test pits were excavated as part of the supplemental RI to further identify the extent of MSW (test pit logs are provided in Appendix F). The extent of MSW, based on findings of the historical and current investigations, is shown on Figure 4.

5.2 GEOLOGY

This section provides an overview of the results of the geologic and hydrogeologic investigations conducted to date at the Site, and related information available from published sources. The results of the investigations are integrated into the following sections to provide an understanding of current Site conditions. The regional geology is presented in Section 5.2.1, Site-specific geology is presented in Section 5.2.2, and hydrogeology is presented in Section 5.2.3.

5.2.1 REGIONAL GEOLOGY

The Site is located in the Yakima Valley, which generally consists of Miocene Columbia River Basalt (CRB) flows, overlain by the Ellensburg formation, which consists of pyroclastic and sedimentary

deposits that interfinger with the uppermost CRB flows. These layers are overlain predominantly by Holocene alluvial deposits (USGS 1962).

Geologic information for the Site's vicinity was obtained from the *Geologic Map of the East Half of the Yakima 1:100,000 Quadrangle, Washington* (Schuster 1994). Near-surface deposits in the vicinity of the Site are mapped as Holocene alluvium. Soil defined as alluvium typically consists of clay, silt, sand, and gravel deposited by running water. Locally, the alluvium includes lacustrine, paludal, and eolian deposits in depressions, and occurs in valley bottoms throughout the area with the most significant deposits along the Yakima River, which is located to the east of the Site. Drilling records from within 0.25 mile of the Site indicate that the Ellensburg Formation in this area consists of a clayey shale and sandstone, capped with cemented gravel and was encountered at approximately 44 feet BGS (Landau Associates 1998).

5.2.2 SITE-SPECIFIC GEOLOGY

The ground surface at the Site slopes gradually downward to the southeast and is approximately 5 to 10 feet higher in elevation than the surrounding properties. The Site's surface is covered predominantly by decomposing wood debris remaining from the historical log storage operations, intermixed with sandy silt and silty sands (Landau Associates 2014). In areas where wood debris has been removed or covered, the surface soil comprises sand and/or silty or sandy gravel fill (SLR 2009, 2010).

Multiple subsurface investigations have occurred at the Site since 1998. Exploration logs for the borings completed at the Site identified the materials encountered as fill and native alluvial deposits. Three geologic cross sections were prepared based on the Site subsurface exploration logs (Appendices E through H), with reference locations shown on Figure 7. Cross sections are presented on Figures 8 through 10 and show the lateral extent of the fill and native alluvium units, MSW, and associated groundwater elevation (based on September 2014 and March 2015 elevation data).

Wood debris varies in thickness, with a maximum observed thickness of approximately 7 feet in the central portion of the Site. In general, the wood debris visible on the surface extends to depths of approximately 3 feet BGS, with the exception of debris observed in the central portion of the Site, where it was observed at depths up to 6 feet BGS (e.g., SB-5 and SB-21). In some central and east locations, the wood debris is underlain by a mixture of silt, sand, and gravel fill material, up to approximately 5 feet thick (e.g., MW-104, SB-34, SB-39, SB-40, TP-51). The sand and silty/sandy gravel fill observed in some surface locations has depths up to 8 feet BGS (e.g., TP-MW-1, FFP-MW-1, FFP-MW-2, GP-17). The locations where wood debris was not observed on the surface were predominantly along the outer boundaries of the Site.

The predominant fill material underlying the wood debris at the Site is the MSW. The MSW has been observed to consist of various materials consistent with traditional domestic waste, including metal,

plastic, glass, paper, and wood. The MSW has been characterized as moist to wet, with a rotten odor. No sheen has been observed in any of the exploratory borings where MSW was encountered. Soil content in the MSW ranges from none to approximately 75 percent soil. Soils intermixed with the MSW include various silts, sands, and gravels (see exploration logs in Appendices E through H). A review of the exploration logs for borings that extended through the MSW indicate that the MSW is up to 18 feet thick, to depths of up to 20 feet BGS in the central portion of the Site (e.g., SB-6, SB-18, SB-21, SB-39, MW-104, MW-106). The MSW is observed to terminate abruptly on the west, south, and eastern boundaries of the Site, which is indicative of the filling of the former log storage pond. As noted on cross section B-B' (Figure 9), the MSW gradually thins to the north. The lateral extent of the MSW is shown on Figure 4. A discussion of the extent of the MSW in relation to groundwater is provided in Section 5.3 below.

The MSW is predominantly underlain by sandy gravel fill, with mixtures of gravelly sand and sandy silt. The fill materials underlying the MSW are approximately 7 feet thick. Native soils were observed below the gravelly sand between 15 and 25 feet BGS, as noted in cross sections A-A' and B-B' (Figures 8 and 9). The observed native soils consist of medium to coarse sand with trace silt and gravel, consistent with alluvial deposits. The sand unit was characterized to be dense and wet, and no sheen or odor was noted in the exploratory logs for the borings that encountered this unit (Appendices E through H).

5.2.3 HYDROGEOLOGY

The results of subsurface investigations conducted between 1998 and 2015 were used to evaluate Site-specific hydrogeologic conditions. The subsurface hydrogeology at the Site can be considered as four Site-specific units, based on the observed conditions outlined in the previous sections – Upper Fill, MSW, Lower Fill, and Native Sand/Gravel.

- Upper Fill – This unit consists of the combined wood debris and mixtures of silt, sand, and gravel fill. The base of the unit ranges from approximately 1 to 8 feet BGS. This unit is predominantly composed of the wood debris; however, when present, the silt, sand, and gravel mixtures are both at the surface and underlying the wood debris in this unit.
- MSW – The MSW directly underlies the Upper Fill, but is not continuous across the Site. The base of the unit can be as shallow as 1 foot BGS (e.g., MSW-TP-1 and MSW-TP-2) along the northern edge of the Site, to depths of 18 feet BGS (e.g., SB-13, SB-18, SB-21, and MW-104).
- Lower Fill – This unit consists of sandy gravel mixtures extending to depths of approximately 8 to 25 feet BGS (e.g., SB-18, SB-34, SB-39, SB-40, TP-40, TP-51, TP-52, and MW-104).
- Native Sand/Gravel – Underlying the Lower Fill unit, the Native Sand/Gravel was encountered at approximately 18 to 25 feet BGS (e.g., FPP-MW-1, FPP-MW-2, MW-104, MW-108, and MW-109).

A hydrogeologic study was conducted in 1998 by Landau Associates in the area immediately adjacent to the Site. The purpose of the study was to identify the location and direction of groundwater

flow in the unconfined aquifer, or water table, in the immediate vicinity of the Site. This investigation indicated that the water bearing zone within the unconfined aquifer is generally encountered between 2.5 and 11 feet BGS with calculated groundwater gradients between 0.005 and 0.007 feet/feet to the southeast (Landau Associates 1998). A later study conducted in 2008 indicated that the unconfined aquifer was identified between 8.5 and 20 feet BGS (Parametrix 2008). These investigations, including recent Site groundwater data, indicate that groundwater flow is predominately to the east-southeast, toward the Yakima River (Figures 5 and 6).

Groundwater investigations conducted between 2009 and 2015 indicate that depths-to-water range between 4.48 to 22.29 feet BGS¹¹. The most recent groundwater data was collected in June 2015. Depth-to-water measurements collected from wells within the extent of MSW (i.e., MW-102 through MW-108) ranged between 14.47 and 20.32 feet BGS during this recent event (Table 2D). The calculated groundwater gradient using the September 2014 results (seasonal high) ranged between 0.003 and 0.007 feet/feet to the southeast; gradients using the March 2015 results (seasonal low) ranged between 0.001 and 0.005 feet/feet to the southeast.

Comparison of the groundwater elevations measured during the groundwater investigations conducted between 2009 and 2015 to the identified elevations and relative depths of MSW indicates that seasonal high groundwater elevations (summer months) were above the base of the MSW and that seasonal low groundwater elevations (early spring months) were predominately below the MSW (SLR 2009, 2010, 2012). In 2009, 2010, 2012, 2014, and 2015, groundwater elevations were also measured in four downgradient wells (i.e., MW-14 through MW-17). The depths-to-groundwater ranged from approximately 4.48 to 13.12 feet BGS (SLR 2010, 2012).

Groundwater elevation data collected between 2009 and 2015 consistently indicate that the general shallow groundwater flow direction is to the east-southeast, toward the Yakima River. Groundwater elevation contours, based on the four quarters of supplemental RI sampling, are presented on Figures 5 and 6. The Yakima River is located approximately 600 feet southeast of the southeastern corner of the former landfill and on the opposite side of I-82.

5.3 SURFACE WATER AND DRAINAGE

The Site is located 600 feet upgradient and to the west of the Yakima River, with I-82 separating the Site from the river. The Site is bordered to the east by a north-south trending drainage system (combined surface and subsurface network). This drainage system includes an open-air culvert/ditch at the

¹¹ The investigations include combinations of groundwater wells MW-6, MW-7, MW-8, MW-9A, MW-11, MW-12, MW-13 (decommissioned), MW-14 through MW-18, TP-MW-1, TP-MW-2, FFP-MW-1 through FFP-MW-3, and MW-100 through MW-109.

northeastern corner of the Site that is fed by the subsurface channel (presumably a historical irrigation channel). The irrigation channel's culvert outlet enters this area at approximately 10 feet below the neighboring surface grade. Areas of vegetation (from dense to sparse) line this area of the drainage system as this area maintains a limited volume of water during the majority of the year. Surface water then flows to the south, enters a culvert about 600 feet downstream, and continues to flow below-grade until it daylights at a second small drainage pond. From there, water drains into another subsurface culvert and flows beneath I-82 with discharge ultimately to the Yakima River (at RG-3).

5.4 NATURAL RESOURCES

The following section summarizes general information on the types of habitats and varying plant and animal species that might be expected to be present at the Site.

5.4.1 TYPES AND FUNCTIONS OF HABITATS

Based on its location within the Yakima River Valley, the dominant habitat of the Site and the surrounding parcels should be Columbia Plateau shrub-steppe habitat. Shrub-steppe habitats in the Yakima River Valley are important because they can support plant (e.g., Spalding's catchfly) and animal (e.g., Pygmy rabbits) species which are federally listed as endangered species under the Endangered Species Act (WDFW 2011). Approximately 5.5 miles southwest of the Site, on the Yakama Reservation, ongoing efforts to restore shrub-steppe habitat are underway (Yakama Nation website 2015). While there are indications of shrub-steppe habitat along the eastern and southern edges of the Site, the presence of I-82 to the east and the surrounding residential/light industrial areas prevent connectivity between the Site and the more natural areas along the Yakima River (see Attachment 1).

5.4.2 PLANT AND ANIMAL SPECIES

Plant types that typically thrive in the dominant Columbia Plateau shrub-steppe habitat are perennial grasses and isolated patches of shrubs, mostly sagebrush (see Attachment 1). While no patches of vegetation are observed within the Site, an area of vegetation (i.e., deciduous trees and perennial grasses) was observed where surface water is present along the northeastern/eastern edge of the Site, along the I-82 corridor.

The shrub-steppe habitat usually supports birds such as sage grouse, sage sparrows, and sage thrashers, along with a variety of other avian species. While specific species have not been identified at the Site, sparrows and thrasher-like birds were observed living in the edge communities surrounding the Site during the time of investigation. Terrestrial animals that may be present in the shrub-steppe habitat include Pygmy rabbits, reptiles, and insects. Surveys have identified the closest Pygmy rabbit habitat in the

Sagebrush Flats Wildlife area approximately 70 miles north/northeast of the City (see Attachment 1). Limited terrestrial wildlife have been observed at the Site, likely due to the absence of vegetation coverage/refuge within the Site, which as discussed previously, is covered predominately by a mixture of soil and wood debris.

6.0 SITE SCREENING INFORMATION

As part of the supplemental RI process, screening levels (SLs) were developed for the media of potential concern at the Site (i.e., soil, groundwater, and soil vapor/LFG) using MTCA values and applicable and relevant and appropriate requirements (ARARs). The method detection limits (MDLs) and RLs for the various laboratory analyses were compared with the SLs to determine appropriate analytical methods for use in the RI; the SLs were then adjusted to the laboratory quantitation limit [QL, applied as the practical quantitation limit (PQL)] for comparison purposes, as appropriate.

The SLs are used in the evaluation and interpretation of the sample analytical data discussed in this Supplemental RI Report. Ecology's 2014 Opinion Letter identified that the laboratory MDLs/RLs for some compounds analyzed for in the previously collected RI groundwater samples were above the previously applied SLs and, therefore, these compounds could not be eliminated from further evaluation (Ecology 2014).

The SLs developed for soil and groundwater at the Site, as discussed in this section, are protective of human health and the environment in accordance with MTCA requirements. Ecology's 2014 and 2015 Opinion Letters identified that consideration of MTCA Method A and B criteria for unrestricted land uses is appropriate for the Site (Ecology 2014, 2015). Surface water-specific SLs were not developed for the Site because surface water is not considered an affected media, and because the groundwater SLs, as discussed in Section 6.1, are protective of surface water.

The MTCA regulations (Chapter 173-340 WAC) provide three approaches for establishing cleanup levels (CLs): Method A, Method B, and Method C. The Method A approach is appropriate for sites that have few hazardous constituents or for contaminants such as TPH and lead for which toxicity information is not available to calculate Method B or Method C CLs. The Method B approach is applicable to all sites. The Method C approach is applicable for specific site uses and conditions.

The Method B and Method C approaches establish CLs based on applicable state and federal laws, and specified risk equations. The Method B approach establishes CLs using exposure assumptions and risk levels for unrestricted land uses, whereas the Method C approach uses exposure assumptions and risk levels for restricted land uses, including industrial properties. MTCA also provides for the adjustment of CLs up to concentrations equal to the PQL or natural background concentration, whichever is higher, when the CLs calculated using Methods B or C are less than natural background levels or levels that can be reliably measured.

The following sections summarize the process used to develop the SLs for the potentially affected media at the Site (i.e., soil, groundwater, and LFG). As mentioned previously, surface water-specific SLs have not been developed because the groundwater SLs discussed below are protective of surface water.

6.1 GROUNDWATER

Ecology's Opinion Letters (2014 and 2015) indicate that the use of MTCA Method A and B groundwater criteria are appropriate for the Site. In addition, the shallow groundwater beneath the Site does not meet the MTCA criteria for non-potable groundwater [WAC 173-340-720(2)]; therefore, the federal and state maximum contaminant level (MCL) criteria for protection of groundwater as drinking water are considered as ARARs, and were also included in the evaluation to established Site SLs. As discussed with Ecology, since the point of discharge for groundwater in the relative vicinity of the Site is the Yakima River, the groundwater SL evaluation conservatively includes consideration of criteria protective of surface water.

Development of groundwater SLs protective of drinking water included the following methodology:

- If MTCA Method A and Method B criteria were available, and if no state/federal MCL criteria were established, the Method A value was selected as the Site groundwater SL protective of drinking water;
- If MTCA Method A and state/federal MCL criteria were available, the lower of the two was selected as the Site groundwater SL protective of drinking water;
- In the absence of MTCA Method A criteria, but with MTCA Method B formula values and state/federal MCL criteria available, the lower of the latter two were selected as the Site groundwater SL protective of drinking water;
- If only one criterion was available (i.e., MTCA Method A, MTCA Method B formula values, or a state/federal MCL), that criterion was selected as the groundwater SL protective of drinking water.

The groundwater SL protective of drinking water evaluation and results are presented in Table 4.

The groundwater SL protective of surface water evaluation included consideration of the following potential criteria:

- Surface water MTCA Method B non-carcinogenic and carcinogenic criteria;
- Freshwater aquatic life acute and chronic criteria as outlined under Chapter 173-201A WAC, Clean Water Act (CWA) §304, and the National Toxics Rule (NTR) 40 Code of Federal Regulations (CFR) 131 regulations;
- Human Health fresh water criteria as outlined under the CWA §304 and NTR 40 CFR 131 regulations.

The groundwater SLs protective of surface water were then established as the lowest value of the available criteria noted above. Table 5 presents the results of the groundwater SL protective of surface water evaluation.

The Site-specific groundwater SLs were then established as the lower of the values protective of drinking water and surface water, as presented in Tables 4 and 5. The Site-specific groundwater SLs are

presented in Table 6. For several chemicals, the SL criterion was lower than the laboratory-specific QL¹². In those instances, the initial chemical-specific SL was raised to the laboratory-specific QL (applied as the PQL) for data comparison and screening purposes.

6.2 SOIL

As with groundwater, Ecology's 2014 and 2015 Opinion Letters also indicate that the use of MTCA Method A and B criteria for unrestricted land uses is appropriate for establishing SLs for Site soil (Ecology 2014, 2015). Therefore, the following methodology was used to establish the SLs for chemicals in soil:

- If a MTCA Method A criterion for unrestricted land uses was available, that criterion was selected as the chemical-specific SL;
- In the absence of MTCA Method A criteria, the MTCA Method B cleanup level was evaluated and selected as the chemical-specific SL. The Method B criterion was established as the lower of the:
 - Protection of groundwater 3-phase model value¹³
 - Direct contact pathway (ingestion only) Method B unrestricted land use standard formula value (lower of carcinogenic and non-carcinogenic values).

After this evaluation was completed, certain Site-specific soil SLs were subsequently adjusted based on the current groundwater analytical results of the RI. Per WAC 173-340-747(3)(f), protection of groundwater does not have to be considered in developing the Method B soil SLs (and subsequent CLs) if it can be empirically demonstrated that the compound's concentration in soil is considered adequately protective of groundwater. Therefore, for compounds that were not detected in groundwater samples at concentrations greater than the Site-specific groundwater SL (see Section 6.1), an empirical demonstration can be made that soil concentrations for a given compound are protective of groundwater. The Site-specific soil SLs are presented in Table 7.

6.3 LANDFILL GAS

The MTCA cleanup regulation [WAC 173-340-750(3)(b)(iii)] provides a Method B CL for methane in indoor and outdoor air of 10.0 percent of the lower explosive limit (LEL; 0.5 percent by volume). This value is considered protective of human health and the environment; however, it does not specifically address concentrations of LFG in soil. Because most LFG investigations involve collecting measurements from probes extending into the shallow subsurface, the data are not representative of indoor or outdoor air. As a result, SLs based on solid waste regulations are typically used to evaluate LFG data.

¹² QL/PQL values are those provided by the analytical laboratory supporting the RI (ALS Global) and are included in Table 6 and in the QAPP included as Appendix C.

¹³ The 3-phase model evaluation incorporated groundwater SL inputs (Table 6); the groundwater SLs inputted into the model included those instances where the groundwater SL was revised to the laboratory-specific QL applied as the PQL.

WAC 173-304-460(2) is applicable to landfills that operated prior to 1991. Although the former landfill was not permitted under these regulations, the regulations provide relevant compliance standards that are considered generally applicable and protective for contaminant migration or exposure, in the absence of other directly applicable regulations. The above-noted regulations provide the following standards, which often are identified as SLs for LFG:

- Methane gas generated at a landfill must not exceed 25.0 percent of the LEL in potential future structures (1.25 percent methane by volume)
- Methane gas must not exceed the LEL for methane at the property (i.e., Site) boundary (5.0 percent methane by volume)
- The concentration of methane gas must not exceed 100 parts per million (ppm) in offsite structures.

Because no buildings or structures exist at the Site, the second criterion noted above represents the appropriate SL to consider when evaluating current LFG concentrations.

7.0 NATURE AND EXTENT OF CONTAMINATION

This section summarizes the results of the supplemental RI sampling activities conducted at the Site between September 2014 and June 2015. Summaries are provided for soil, groundwater, and LFG, and the data are evaluated against the media-specific SLs discussed in Section 6.0, as appropriate. Laboratory data reports are provided in Appendix I; data usability and validation information is provided in Appendix J.

7.1 SOIL QUALITY

This section summarizes the analytical results for the shallow (near surface) and subsurface soil sampling completed at the Site during installation of the additional groundwater monitoring wells (September 2014) and LFG probes (October 2014 and April 2015). A sufficient volume of soil was not available for sample collection (as outlined in the Work Plan) at all of the planned locations, in part because of the presence of wood debris (see Table 1). Soil SLs for this investigation are included in Table 7; soil analytical results with comparison to the SLs are presented in Table 8. Soil sampling results are summarized by chemical group and are presented based on relative location at the Site (i.e., within the Site, hydraulically upgradient/downgradient, etc.), as appropriate.

7.1.1 PETROLEUM HYDROCARBONS

Based on the results of the September 2014 (groundwater well installation), and the October 2014 and April 2015 (LFG probe installation) soil sampling events, TPH-G, TPH-D, and TPH-O were detected in one or more soil samples at locations within the area of investigation. Per Ecology's request, the samples identified for TPH-D/TPH-O analysis (subsequent to the HCID results) were analyzed both with and without SGC; the analytical results are provided in Table 8.

For those soil samples collected during installation of the groundwater wells (September 2014) within the extent of MSW (i.e., MW-102 through MW-108), detected concentrations of petroleum hydrocarbons were identified in the shallow (near surface) soil samples only; no concentrations above the RLs were detected in the samples collected beneath the MSW. TPH-G, TPH-D, and TPH-O were detected in the shallow soil sample collected at MW-106; this was the only sample with a detection of TPH-G above the RL¹⁴. TPH-D and TPH-O were also detected above the RLs in the shallow soil sample collected at MW-107. Only TPH-O was detected above the RL in the shallower soil samples collected at MW-102,

¹⁴ The SL for TPH-G is 100 milligrams per kilogram (mg/kg); if benzene is present the SL for TPH-G is 30 mg/kg. VOCs were not analyzed in the sample collected at MW-106; the TPH-G result was 35 mg/kg at that location. Benzene was not detected above the RL in any soil or groundwater sample for which it was analyzed during the course of the supplemental RI activities.

MW-104, MW-105, and MW-108. However, none of these detections were greater than the corresponding soil SLs, including the resulting TPH-D and TPH-O concentrations analyzed with and without SGC. Petroleum hydrocarbons are not considered as a COPC in surface or subsurface soil at the Site.

TPH-D and TPH-O were also detected above the RLs in the soil sample collected just above the groundwater table in LFG probe boring GP-24; the detected concentrations were less than the soil SL (both with and without SGC). GP-24 is located to the north and hydraulically upgradient of the Site; therefore, the detected TPH-D and TPH-O concentrations are not considered related to the Site¹⁵. TPH-O was also detected above the RL at LFG probe boring locations GP-27¹⁶ and GP-28; the results were less than the soil SL (both with and without SGC). GP-27 and GP-28 are located on the eastern edge of the Site adjacent to WSDOT's I-82 corridor.

7.1.2 METALS

Various metals were detected above the RLs in the soil samples collected and analyzed during groundwater well and LFG probe installations. Detected metals in soil included arsenic, barium, cadmium, chromium (III), iron, lead, manganese, mercury, silver, and sodium; hexavalent chromium and selenium were not detected above the RLs in the samples for which they were analyzed.

Of the various metals detected, iron was greater than the soil SL in 100 percent of the samples analyzed (24 of 24 samples). The soil SL for iron is based on the Method B preliminary soil CL of 151 milligrams per kilogram (mg/kg), which incorporates consideration of protection of groundwater 3-phase model values. However, the background concentration for iron, based on the statewide 90 percentile value (PTI 1989), is 43,100 mg/kg. None of the detected iron concentrations are greater than this background value in the samples analyzed during the September and October 2014, and April 2015 soil investigations; therefore, iron is not considered a COPC in surface or subsurface soil at the Site.

7.1.3 CONVENTIONAL AND FIELD PARAMETERS

Soil samples collected during both the September and October 2014, and April 2015 investigations were analyzed for fluoride, nitrate, and nitrite. Although these three compounds were detected above the RLs in several locations, in both shallow (near surface) and deeper soil samples, none of the results were greater than their respective soil SLs.

The deeper soil samples (beneath the MSW) collected during well installation and in the samples collected during the LFG probe installation were also analyzed for pH; the results ranged between 6.07

¹⁵ GP-24 is a replacement for previously destroyed LFG probe GP-22.

¹⁶ A permanent LFG probe was not installed at GP-27 because of access constraints; a soil sample was collected for analysis in the vicinity of the planned probe's location.

and 8.62. The highest two pH values were 8.62 at MW-100 (hydraulically upgradient of the Site) and 8.42 at MW-109 (hydraulically cross-gradient/downgradient and to the south of the Site). The lowest pH values were in samples collected to the north (hydraulically upgradient of the Site) at MW-101, GP-23, GP-24, and GP-26, and at location GP-27 at the eastern edge of the Site. pH values in the soil samples collected from beneath the MSW were generally in the neutral pH range. Conventional parameters are not considered COPCs in surface or subsurface soil for the Site.

7.1.4 PESTICIDES

Several pesticides were detected above the RLs in the soil samples for which they were analyzed during the September and October 2014, and April 2015 investigations; pesticides were analyzed using low-level RLs to target the soil SLs, to the extent possible. For soil samples collected within the Site (i.e., within the extent of MSW), pesticides were only analyzed for in the soil samples collected beneath the MSW. Pesticide analysis was planned for the shallow soil samples from MW-100 and MW-109; however, sufficient soil volume for analysis was only available at MW-109.

The detected pesticides include Aldrin, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and endosulfan sulfate; the results were greater than the soil SLs at two locations. The only pesticide SL exceedance identified at the Site was at MW-103 in the sample collected between 20.5 and 21.5 feet BGS (4,4'-DDD at 0.012 mg/kg, above the SL of 0.009 mg/kg). The other location with SL exceedances was the soil sample at the hydraulically upgradient/off-Site GP-26 location that was collected between 7.5 and 8.5 feet BGS (4,4'-DDD at 0.045 mg/kg, above the SL of 0.009 mg/kg; and endosulfan sulfate at 0.0053 mg/kg, above the SL of 0.003 mg/kg). The pesticide 4,4'-DDD is considered a COPC in subsurface soil for the Site.

7.1.5 POLYCHLORINATED BIPHENYLS

The PCB Aroclor 1242 was detected above its RL at two locations within the Site during the September 2014 investigation. Aroclor 1242 was detected at sample locations MW-105 (0.0059 mg/kg) and MW-106 (0.028 mg/kg). Relevant criteria are not available to derive a Site-specific soil SL for Aroclor 1242; however, the Aroclor 1242 results in soil do not exceed the soil SL for total PCBs (i.e., 1.0 mg/kg).

No PCBs were detected in the soil samples collected during the installation of the LFG probes in October 2014. During LFG probe installation in April 2015, the PCB Aroclors 1254 and 1260 were detected above the RLs in one sample collected between 5.5 and 6.5 feet BGS at location GP-27 (a LFG probe was not installed at that location). Both the detected Aroclor 1254 and 1260 results were well below the soil SLs for those compounds (see Table 7). PCBs in surface and subsurface soil are not identified as a COPC for the Site.

7.1.6 VOLATILE ORGANIC COMPOUNDS

No VOCs were detected above the RLs in the soil samples collected from the Site (i.e., MW-102 through MW-108) during the September 2014 soil investigation. No VOCs were identified at hydraulically upgradient/off-Site locations MW-100, MW-101, GP-23, or GP-24, or at the location to the south/cross-gradient of the Site (MW-109). The only detected VOC was acetone at sample locations GP-26 (hydraulically upgradient of the Site) and at GP-27, GP-28, GP-29, and GP-31 (along the eastern edge of the Site adjacent to WSDOT's I-82 corridor). However, the detected concentrations of acetone in these five samples were well below the soil SL of 72,000 mg/kg. VOCs in surface and subsurface soil are not identified as a COPC for the Site.

7.1.7 SEMIVOLATILE ORGANIC COMPOUNDS

Three SVOCs were detected above the RLs in the soil samples analyzed during the September and October 2014 soil investigations, including 3&4-methylphenol, bis(2-ethylhexyl)phthalate (BEHP), and n-nitrosodiphenylamine; no SVOCs were detected above the RLs during the April 2015 investigation. BEHP was the most frequently detected SVOC compound (8 of 19 samples analyzed); no detected result was greater than the soil SL for BEHP. The one detection of 3&4-methylphenol (MW-101, hydraulically upgradient of the Site) also did not exceed its corresponding soil SL. The only SVOC detection at a concentration greater than the soil SL was n-nitrosodiphenylamine in the sample collected below the MSW (between 13.5 and 14.5 feet BGS) at location MW-106 [110 micrograms per kilogram ($\mu\text{g}/\text{kg}$), slightly above the SL of 100 $\mu\text{g}/\text{kg}$]. No other SVOCs were detected above the RLs. The SVOC n-nitrosodiphenylamine is considered a COPC in subsurface soil for the Site.

7.1.8 POLYCYCLIC AROMATIC HYDROCARBONS

Selected-ion monitoring (SIM) analysis was used to meet the lower SLs for the compounds included in the PAH series. Several PAHs were detected above the RLs in samples collected at locations within the Site (i.e., MW-102 through MW-108) and at locations both hydraulically upgradient/off Site (GP-23 and GP-26), and cross-gradient/to the south of the Site (MW-109); no PAHs were detected above the RLs in the soil samples collected during the April 2015 investigation.

PAHs were detected predominately in the shallower soil samples; however, detections in deeper samples (e.g., MW-106 and GP-23) were also identified. All of the detected PAH concentrations were below their corresponding soil SLs and no soil sample results at a given location were greater than the carcinogenic polycyclic aromatic hydrocarbon (cPAH) toxicity equivalency (TEQ) SL value of 100 $\mu\text{g}/\text{kg}$. PAHs in surface and subsurface soil are not identified as a COPC for the Site.

7.2 GROUNDWATER QUALITY

This section provides a summary of the results of the four quarterly groundwater events conducted as part of the supplemental RI activities (i.e., September and December 2014, March and June 2015). The groundwater investigation approach and analytical program are discussed in Section 4.3 and outlined in Tables 3A through 3D.

The groundwater SL evaluation and Site-specific groundwater SLs are presented in Tables 4, 5, and 6, respectively. As noted previously, the originally proposed groundwater preliminary screening levels (PSLs) (Landau Associates 2014) were revised between the September 2014 and subsequent sampling events to consider groundwater protective of surface water criteria. Therefore, some of the RLs used during analysis of the September 2014 samples do not meet the revised PSLs, which have been applied as SLs; the RLs used for analysis of the subsequent three groundwater sampling events meet the SLs [based either on the RLs or the chemical-specific laboratory QL (applied as the PQL); see Table 6 for SL evaluation].

This section presents the analytical results for the four quarterly groundwater sampling events by chemical group; the groundwater analytical results and the corresponding comparison to the chemical-specific SLs are presented in Table 9. Groundwater elevation and flow direction data, which was collected at the time of these four sampling events, are discussed in Section 4.3.2 and shown on Figures 5 and 6, respectively. The results are presented based on relative locations at the Site (i.e., within the extent of MSW, hydraulically upgradient/downgradient/cross-gradient, etc.), as appropriate.

7.2.1 PETROLEUM HYDROCARBONS

Both TPH-D and TPH-O were detected in the groundwater samples collected during the four quarters of groundwater monitoring. Per Ecology's request, the samples identified for TPH-D/TPH-O analysis (subsequent to the HCID results) were analyzed both with and without SGC. The TPH-D and TPH-O results and associated exceedances of the SLs are presented on Figure 11.

Detections of TPH-D and TPH-O above the RLs were predominately in samples collected off Site to the northwest (hydraulically upgradient) at well locations within the former Plywood Plant parcel. These TPH-D and TPH-O concentrations were identified in samples collected from FPP-MW-1¹⁷, FPP-MW-2, MW-12, TP-MW-2, and MW-101. As presented on Figure 11 and in Table 9, TPH-D and TPH-O concentrations fluctuated at many locations over the course of the four quarterly events. Elevated TPH-D and TPH-O concentrations were also detected in soil and groundwater samples collected during the 2013 Phase II investigation of the parcels hydraulically upgradient of the Site (see Appendix A, Tables A-6

¹⁷ FPP-MW-1 and FPP-MW-2 were not sampled during the September 2014 event.

and A-7). These petroleum hydrocarbon exceedances are not considered to be associated with potential historical releases from the Site.

TPH-D and TPH-O were detected above the RLs in the sample from MW-106 (within the extent of MSW) during the December 2014 monitoring event. The detected concentration without SGC was greater than the SL, but below the corresponding SL using SGC. Only TPH-D (without SGC) was detected at MW-106 in the subsequent March and June 2015 sampling events, but at concentrations below the SL. No other detections of petroleum compounds above the RL were identified in samples collected from wells at the Site (within the extent of MSW) or hydraulically downgradient of the Site. TPH is not identified as a COPC for groundwater at the Site.

7.2.2 METALS (TOTAL AND DISSOLVED)

Metals (both total and dissolved) were the most frequently detected compounds in groundwater samples collected from Site and vicinity wells during the four quarters of groundwater monitoring. Detected metals include arsenic, barium, calcium, chromium (III), iron, lead, magnesium, manganese, potassium¹⁸, and sodium. Cadmium, hexavalent chromium, mercury, selenium, and silver were not detected above the corresponding RLs in any of the samples collected during the four quarterly sampling events for which the compounds were analyzed. As mentioned previously, the groundwater PSLs were revised in some instances after the September 2014 sampling event based on the incorporation of criteria protective of surface water; the RLs used subsequent to the September 2014 investigation meet the revised PSLs which have been applied as SLs (see Tables 7 and 9).

Of the dissolved metals detected above the RLs, dissolved arsenic, iron, lead, manganese, and sodium were greater than their corresponding SLs in one or more samples. The SL exceedances were identified at locations throughout the monitoring well network, both within the Site (i.e., MW-102 through MW-108), hydraulically upgradient (within the former Plywood Plant parcel, etc.), and hydraulically downgradient of the Site. In part, these detected concentrations reflect the area-wide reducing conditions that are apparent in the shallow aquifer, as discussed further in Section 9.1.1. A summary of the dissolved metals results is included in the following sections; select dissolved metals concentrations are presented on Figures 12 and 13.

7.2.2.1 Arsenic

Dissolved arsenic exceeded the SL in 75 percent of the samples analyzed (77 of 102) during the four quarterly sampling events completed in the area of investigation. The initial dissolved arsenic SL

¹⁸ Potassium was only analyzed during the March and June 2015 quarterly events.

[i.e., 0.018 micrograms per liter ($\mu\text{g/L}$)] is based on protection of surface water criteria for human health (fresh water); the SL was raised to the laboratory QL (applied as the PQL; i.e., 0.45 $\mu\text{g/L}$) for evaluation purposes. The SL exceedances were in samples collected from locations across the entire area of investigation, upgradient, downgradient, and within the Site. The highest detected concentrations were in samples collected at locations hydraulically-upgradient of the Site (i.e., MW-TP-2 and MW-18) and within the Site (i.e., MW-103, MW-104, MW-105, and MW-108). The samples from the hydraulically downgradient locations had low or non-detect concentrations of dissolved arsenic (based on the RL used for each round of investigation). Dissolved arsenic results are shown on Figures 12 and 13.

None of the detected dissolved arsenic concentrations from the four quarterly sampling events exceeded the state background concentration for dissolved arsenic (10.7 $\mu\text{g/L}$) under consideration by Ecology (2010) or the federal MCL (10 $\mu\text{g/L}$). In addition, only a limited number of the dissolved arsenic concentrations (at locations TP-MW-2, MW-18, MW-103, MW-104, MW-105, and MW-106) exceeded the MTCA Method A criterion (i.e., 5 $\mu\text{g/L}$) for unrestricted land uses; none of these exceedances were in the results for all four quarters of sampling at each of these locations.

Although consideration of criteria protective of surface water is incorporated into the evaluation of Site conditions (given the Site's proximity to the Yakima River), the preliminary point of compliance and cleanup standards for the Site (as discussed in Section 9) are based on the protection of drinking water criteria and background concentrations. None of the dissolved arsenic concentrations detected during the four quarterly sampling events are greater than either the federal drinking water criterion or state background value under consideration by Ecology. Exceedances of the Method A criteria for unrestricted land uses are limited to locations hydraulically upgradient of the Site and within the Site; exceedances of dissolved arsenic above this criterion were not identified downgradient of the Site during any of the four rounds of sampling. Nevertheless, dissolved arsenic in groundwater is considered a COPC for the Site.

7.2.2.2 Iron

Dissolved iron exceeded the SL in 76 percent of the samples analyzed (78 of 102) during the four quarterly sampling events; the dissolved iron results are shown on Figures 12 and 13. The dissolved iron SL (i.e., 300 $\mu\text{g/L}$) is based on secondary MCL drinking water criteria (for aesthetics). Similar with the dissolved arsenic concentrations, the dissolved iron SL exceedances were identified in samples collected from locations across the entire area of investigation. The highest detected concentrations from the four quarterly sampling events were at FPP-MW-1 and MW-18 (hydraulically upgradient of the Site) and MW-106 (within the Site). Elevated concentrations were also identified at other sample locations hydraulically upgradient, hydraulically downgradient, and within the Site. Only the samples from the most extreme hydraulically-upgradient and -downgradient well locations were non-detect at the RL for dissolved iron. A

statewide dissolved iron background criterion was not available for comparison with the concentrations detected during this RI. Dissolved iron in groundwater is considered a COPC for the Site.

7.2.2.3 Lead

Dissolved lead concentrations in groundwater exceeded the SL (i.e., 0.54 µg/L) during the March and June 2015 sample events at one sampling location (i.e., TP-MW-2). TP-MW-2 is located hydraulically upgradient of the Site and these dissolved lead concentrations are not considered to be associated with historical Site activities. Lead is not considered a COPC for groundwater at the Site.

7.2.2.4 Manganese

The dissolved manganese concentrations exceeded the SL in 87 percent of the samples analyzed (89 of 102) during the four quarter sampling events; the dissolved manganese results are also shown on Figures 12 and 13. Similar to dissolved iron, the dissolved manganese SL (i.e., 50 µg/L) is based on secondary MCL drinking water criteria (for aesthetics) and the SL exceedances were identified in samples from monitoring locations across the entire area of investigation. Similar to dissolved iron, the highest detected concentrations of dissolved manganese were in the samples collected at locations hydraulically upgradient of the Site (FPP-MW-1 and MW-18) and at one location (MW-106) within the Site. In general, the pattern of detections of dissolved manganese mirrored the pattern for the detections of dissolved iron (as discussed in Section 7.2.2.2), reinforcing evidence of the reducing-conditions across the area of investigation. A statewide dissolved lead background criterion was not available for comparison with the concentrations detected during this RI. Dissolved manganese in groundwater is considered a COPC for the Site.

7.2.2.5 Sodium

The dissolved sodium concentrations exceeded the SL in 34 percent of the samples analyzed (35 of 102) during the four quarterly sampling events; the dissolved sodium results are also shown on Figures 12 and 13. Similar to dissolved iron and manganese, the dissolved sodium SL (i.e., 20,000 µg/L) is based on secondary MCL drinking water criteria (for aesthetics and taste) and the SL exceedances were identified in samples from locations across the entire area of investigation. The highest detected concentrations for dissolved sodium varied greatly across the four quarterly sampling events. The highest concentration was identified at TP-MW-2 during the March 2015 event (i.e., 130,000 µg/L). Elevated concentrations were also identified at hydraulically upgradient locations (FPP-MW-1, FPP-MW-2, and MW-12), within the Site (MW-106), and also hydraulically downgradient of the Site (MW-8, MW-16, and MW-17). Dissolved

sodium concentrations varied greatly at individual sampling locations across the four quarters sampled. Dissolved sodium in groundwater is considered a COPC for the Site.

7.2.3 CONVENTIONAL AND FIELD PARAMETERS

Various conventional parameters were analyzed for in groundwater samples collected during the four quarters of supplemental RI sampling. Many of these parameters were analyzed specifically to support evaluation of potential landfill contamination dynamics, including sulfate, ammonia, alkalinity, bicarbonate, TOC, and TDS. Fluoride, chloride, nitrate, and nitrite were also evaluated at most sampling locations; these compounds were detected in several samples during the four quarters.

The fluoride results from the September sample at MW-101 and the March sample at TP-MW-2 (both locations hydraulically upgradient and north of the Site) were the only detected concentrations that exceeded the SL; the fluoride results from the other three quarters from both of these locations did not exceed the SL. Fluoride is not considered a COPC for groundwater at the Site.

The nitrate concentration from the March sample at MW-8 (hydraulically downgradient of the Site) exceeded the corresponding SL; the nitrate concentrations at this location for the other three quarters did not exceed the SL for nitrate. Based on this one SL exceedance, nitrate is considered a COPC for groundwater at the Site.

pH values in the groundwater samples, as measured in the field at the time of sampling, were outside of the SL range (6.5 to 8.5) at several locations during the four quarters of supplemental RI sampling. The percentage factor for pH SL exceedances across the four quarters was 71 percent (72 of 102 samples). In general, pH values outside of the SL range were identified below the range (i.e., <6.5); however, pH values at well MW-9A (hydraulically upgradient and northwest of the Site) were above the pH SL range (i.e., >8.5) at 9.76 in September and 9.10 in December; pH values at MW-9A were below the SL range in March and June 2014 (pH values are presented on Figures 12 and 13). pH in groundwater is considered a COPC for the Site.

7.2.4 PESTICIDES

Pesticides were detected above the RLs at several locations during the four quarters of groundwater sampling. Endosulfan II was the most frequently detected pesticide above its RL across the four quarters, at locations hydraulically upgradient, downgradient, and within the Site. The endosulfan II detections were identified predominately during the March and June 2015 sampling events. The only sample location with exceedances of any corresponding pesticide SL was within the Site at MW-103 (endosulfan II in March 2015 only, 4,4'-DDD during all four quarters, and 4,4'-DDT in September 2014 only). Therefore, these three pesticides are considered COPCs in groundwater at the Site.

7.2.5 POLYCHLORINATED BIPHENYLS

Low concentrations of PCB Aroclors 1232 and 1242 above the RLs were identified in samples from the six groundwater wells located within the Site (i.e., MW-102 through MW-108) during the four quarterly sampling events. These low concentrations in the samples from the Site wells were not detected during every quarter at each location; PCB Aroclor 1232 was only detected during the June 2015 sampling event, the other detections were in the Aroclor 1242 range. Relevant criteria are not available to derive Site-specific SLs for PCB Aroclors 1232 and 1242; however, none of the concentrations exceeded the SL for total PCBs in groundwater (i.e., 0.1 µg/L).

Low concentrations of PCB Aroclors 1232 and 1242 above the RLs were also detected in samples from hydraulically downgradient wells (i.e., MW-7, MW-8, MW-15, and MW-17). As with the results from the Site groundwater wells, detections above the RLs were not identified at each location for each quarterly sampling event and PCB Aroclor 1232 was detected in the June 2015 samples only. PCB Aroclor 1248 was detected above the RL in June 2015 at MW-8; this was the only detection of PCB Aroclor 1248. All of these detected Aroclor concentrations at the hydraulically downgradient sample locations were below the SL for total PCBs. PCB Aroclors are not considered COPCs in groundwater at the Site.

In general, when reporting PCB Aroclors at ultra-low detection limits, the relative “weathered” age of the compounds detected can affect the interpretation of the result as the peak patterns can differ from the Aroclor standard. PCB Aroclors are mixtures of individual PCB congeners. Some of these individual congeners are shared across more than one Aroclor mixture, which can also complicate comparing older materials with one Aroclor mixture or another. Because the regulatory criteria are for Aroclors and total PCBs, congener analysis was not appropriate. ALS Global, the project analytical laboratory, noted that the Aroclor concentrations reported for each sample met the method criteria for identification and the total PCB SL for detected PCB concentrations was not exceeded at any sample location.

7.2.6 VOLATILE ORGANIC COMPOUNDS

The only VOCs detected above the RLs in the groundwater samples collected during the four quarters of groundwater monitoring were chloroform (MW-9A, MW-100, and MW-109), chlorobenzene (MW-106), and VC (MW-106). For a few of the analyses, the September RLs did not meet the original PSLs, which were subsequently revised to also be protective of surface water, as discussed in Section 6.2 (see Table 9).

The chloroform concentrations in the sample from MW-9A exceeded the corresponding SL in the September and December 2014, and March 2015 monitoring events; chloroform was not detected above the RL in the sample collected in June 2015. MW-9A is located hydraulically upgradient and off the Site

on the neighboring parcel to the northwest. The chloroform concentration detected at MW-109 (September 2014 only) was not above the corresponding SL. Chloroform is not considered a COPC for at the Site.

The chlorobenzene concentrations at MW-106 in the December 2014 sample was well below its corresponding SL; the chlorobenzene concentrations in the other three quarterly samples were non-detect at the RL. Chlorobenzene is not considered a COPC for groundwater at the Site.

The VC concentration detected in December 2014 at MW-106 (within the Site) exceeded the corresponding SL (based on the laboratory QL/PQL for VC); VC was not detected above the RL at this location during the other three rounds of sampling. No other VOCs were detected above their respective RLs in the samples from the Site or hydraulically downgradient wells during any of the four quarterly sampling events. However, based on the one SL exceedance, VC is considered a COPC in groundwater at the Site.

7.2.7 SEMIVOLATILE ORGANIC COMPOUNDS

BEHP, 3,3'-dichlorobenzidine, 3&4-methylphenol, and n-nitrosodiphenylamine were detected above the RLs in one or more groundwater samples during the four quarters of groundwater sampling. BEHP was the most frequently detected SVOC compound with three detections in the September 2014 samples and seven detections in the December 2014 samples; all ten detections exceeded the corresponding SL. The detections were identified in samples collected at locations throughout the area of investigation. However, BEHP was not detected above the RL in any samples collected during the March and June 2015 sampling events.

As a widely used plasticizer, BEHP is often identified as a cross-contaminant in laboratory analysis; Teflon-lined tubing was used exclusively during the groundwater sampling for the four quarterly monitoring events. BEHP was identified at locations throughout the area of investigation, and only in samples from two of the four quarterly events, which supports the initial conclusions that the detections are related to laboratory cross contamination. Nevertheless, BEHP is considered a COPC for groundwater at the Site.

N-nitrosodiphenylamine was detected above the SL at hydraulically upgradient well MW-12 in the June 2015 sampling round only; the other three quarterly results at this location were non-detect at the RL. The compound was also detected in the sample from Site well MW-106 above the SL during the December 2014 and June 2015 sampling events; the other two quarterly results for this location were non-detect at the RL. N-nitrosodiphenylamine was not detected above the RL at any other sample location within the area of investigation during the four quarters sampled; however, it is considered a COPC in groundwater at the Site.

The VOC 3,3'-dichlorobenzidine was detected above the SL at hydraulically downgradient well MW-15 in September 2014 only; the compound was non-detected at the RL at this location in samples from the other three quarters. 3,3'-dichlorobenzidine was not identified above the RL at any other location within the area of investigation during the four quarters of groundwater sampling.

3&4-methylphenol was detected at hydraulically upgradient well MW-101 below its corresponding SL during the September 2014 sampling event only. Both 3,3'-dichlorobenzidine and 3&4-methylphenol are not considered COPCs for groundwater at the Site.

7.2.8 POLYCYCLIC AROMATIC HYDROCARBONS

SIM analysis was used to meet the lower SLs for the compounds included in the PAH series. Several PAHs were detected in samples from within the Site (i.e., MW-102 through MW-108) and in locations both hydraulically upgradient (TP-MW-1, FPP-MW-1, FPP-MW-2, FPP-MW-3, MW-9A, MW-12, MW-18, and MW-101), and hydraulically downgradient of the Site (MW-7, MW-8, MW-14, MW-15, MW-16, MW-17, and MW-109). Only the detected concentrations of benzo(a)anthracene at FPP-MW-1 and FPP-MW-2 from the samples collected during the March 2015 sampling event were greater than the corresponding SL. Both FPP-MW-1 and FPP-MW-2 are located hydraulically upgradient from the Site.

None of the remaining PAH detections from samples within the area of investigation during the four quarters of sampling were greater than the corresponding compound-specific SLs. Furthermore, the detected concentrations for the samples from all locations were below the corresponding cPAH TEQ SL (i.e., 0.1 µg/L). Therefore, PAHs are not considered a COPC for groundwater at the Site.

7.3 LANDFILL GAS

An evaluation of soil vapor quality was conducted by monitoring LFG concentrations concurrent with the December 2014 groundwater sampling event, again in January 2015, and concurrently with the June 2015 groundwater sampling event. The first round of monitoring included collecting LFG measurements at the previously existing probes and those installed in October 2014; the June 2015 survey also included evaluation of concentrations at the four new LFG probes installed in April 2015 (i.e., GP-28 through GP-31). The LFG monitoring events were conducted per the procedures and methods outline in the Work Plan submitted to Ecology (Landau Associates 2014).

As discussed in Section 4.5, several issues arose during the December 2014 survey that affected the accuracy and representativeness of the monitoring results, including attaining effective seals on the varying casing sizes and adaptors associated with the historically installed LFG probe network. For the subsequent monitoring conducted in January 2015, new probe caps/sampling ports were constructed, based

on each probe's specific construction, to help ensure that an effective seal was obtained prior to sample collection. Therefore, the results of the January and June 2015 monitoring events are considered more accurate and representative of current Site conditions.

In January 2015, the existing LFG probe network (GP-1 through GP-9 and GP-11 through GP-20) and the new gas probes (GP-23 through GP-26) were monitored using a LFG analyzer to measure concentrations of methane, oxygen, carbon monoxide, carbon dioxide, hydrogen sulfide, hydrogen, and static pressure¹⁹. The results of the January 2015 monitoring event are provided in Table 10A. The June 2015 event included monitoring at the same LFG probes evaluated in January 2015 and at the new LFG probes installed in April 2015 (i.e., GP-28 through GP-31); results as presented in Table 10B.

Based on requirements under existing landfill/solid waste regulations and as discussed in Section 6.3, the primary focus of the LFG evaluation is to determine methane concentrations at the Site. The other monitored parameters provide additional characterization data that are useful in understanding LFG production, potential migration, risk of fire, and the potential for odor issues. The additional characterization data can sometimes assist in determining the source of LFG, and is also useful in assessing the overall representativeness of the data based on the relative proportions of gasses present in the LFG samples. For example, the oxygen and carbon dioxide data can provide confirming evidence that a sample represents actual LFG and not ambient air, which could cause low bias on the methane measurements. The relatively low oxygen and elevated carbon dioxide concentrations, as reported in Tables 10A and 10B, help confirm the representativeness of the sampling results for the January and June 2015 monitoring events.

As discussed in Section 6.3.3, since no buildings currently occupy the Site, associated methane concentrations can reasonably be screened against the requirement under WAC 173-304-460(2) that methane concentrations must not exceed the LEL (5 percent by volume) at the property/Site boundary. In both January and June 2015, the highest concentrations of methane were recorded at LFG probes GP-19 and GP-20 located within the extent of MSW (67.3 percent and 57.2 percent in January 2015, respectively, and 63.0 percent and 58.7 percent in June 2015, respectively). These methane concentrations are considerably higher than the concentrations measured outside the extent of MSW. Based on the results of the January and June 2015 surveys, methane is considered a COPC for the Site.

Methane concentrations above or close to the 5.0 percent by volume criterion were also recorded at locations to the west and north of the Site, in the areas of buried wood debris, including at GP-1 (June 2015 only); and GP-3 through GP-5, GP-11 through GP-13, and GP-23 through GP-26 (both surveys). The southern LFG probes (i.e., GP-7 through GP-9, GP-14, GP-15, GP-31), and eastern LFG probes (i.e.,

¹⁹ A CES/Landtec GEM-2000 Plus multi-gas meter or similar meter was used.

GP-6 and GP-28 through GP-30) were installed in areas where no wood debris or MSW was identified; methane concentrations at those locations were zero or close to zero during both survey events.

Hydrogen sulfide gas was also measured in January and June 2015. Hydrogen sulfide was only detected in LFG probes located within the footprint of the MSW (i.e., LFG probes GP-19 and GP-20) and at two locations southwest and adjacent to the MSW (LFG probes GP-5 and GP-12). Hydrogen sulfide gas was not detected in the LFG probes located north of the extent of MSW, in areas associated with the presence of wood debris. Trace concentrations of hydrogen sulfide (between 10 and 200 ppm; SWANA 1997) are typically observed in LFG since various waste components provide a source of sulfur, which generates hydrogen sulfide gas under reducing conditions. Decaying wood debris is not a typical source of hydrogen sulfide, unless a secondary source of sulfur is present, since sulfur is present at only trace levels in wood bark (roughly 0.07 percent by weight; USDA 2002).

Based on the results of the January and June 2015 surveys, the 5.0 percent by volume (i.e., LEL) criterion is exceeded within the MSW footprint, which is not unexpected, and in two locations immediately adjacent and to the southwest of the extent of MSW (i.e., GP-5 and GP-12). Therefore, the Site boundary, as defined by MTCA, would extend slightly beyond the boundary of buried MSW to include LFG probe locations GP-5 and GP-12. The specific characteristics of the LFG measured at those locations (i.e., methane and hydrogen sulfide results) and the close proximity of these two LFG probes to buried MSW could indicate the measured LFG is likely being influenced by releases from adjacent degrading MSW. However, additional methane results at LFG probes farther west and south of this area (i.e., GP-14, GP-15, GP-17, and GP-18) indicate methane is not migrating beyond the location of GP-5 and GP-12. As a result, the criterion is exceeded slightly beyond the southwestern extent of MSW, but is not exceeded at the southern perimeter of the Landfill parcel.

The methane criterion exceedances measured at LFG probes located along the northwestern perimeter and to a lesser degree along the north/northeastern perimeter are likely attributed to the presence of decaying wood debris in those areas. These LFG probes (including GP-11, GP-13, GP-23, GP-25, and GP-26) were installed in areas where wood debris was clearly identified at the time of drilling. The construction logs indicate that GP-11 and GP-13 are actually screened within a layer of wood debris, which similar to MSW, produces methane gas when decomposing. Based on the presence of decaying wood debris at these locations, the methane detections in these areas to the north/northwest of the Site are likely not associated with former MSW landfill activities. This is also supported by the difference in gas composition between samples collected from within the MSW footprint compared with those collected outside the footprint relative to the presence of hydrogen sulfide gas, as discussed above.

Prior to future redevelopment of the Site, potential mitigation approaches will be evaluated based on planned Site usage. Under current conditions, since the Site has no buildings or impermeable cover, LFG is able to vent passively to the atmosphere and no direct receptor pathway is established.

8.0 CONTAMINANTS OF CONCERN

Based on the results of the supplemental RI activities conducted between September 2014 and June 2015, Site-specific COPCs were identified in Section 7.0 for the media under investigation (i.e., soil, groundwater, and LFG). This section further evaluates these COPCs with respect to overall Site contaminant conditions and identifies which COPCs (by media type) should be carried forward as Site-specific contaminants of concern (COCs).

8.1 SOIL

Soil samples, both shallow (near surface) and deeper (subsurface) samples were collected for analysis during installation of the new monitoring wells (September 2014) and LFG probes (October 2014 and April 2015). Based on the evaluation summarized in Section 7.1, TPH compounds, metals, conventional parameters, PCBs, VOCs, and PAHs are not considered Site-specific COCs in soil.

The concentration of the pesticide 4,4'-DDD exceeded the SL (i.e., 0.009 mg/kg) at one sample location (MW-103, between 20.5 and 21.5 feet BGS) with a result of 0.012 mg/kg. The SL for 4,4'-DDD in soil was based on the protection of groundwater (3-phase model) evaluation using surface water criteria inputs (see Tables 6 and 7). The pesticide 4,4'-DDD was not identified in any of the samples collected at the hydraulically downgradient, off-Site groundwater wells located near the river during the four quarters of supplemental RI sampling. Therefore, there is no indication of off-Site migration and a potential threat to surface water, and the SL for 4,4'-DDD in soil can be revised using the 3-phase model evaluation with protection of drinking water criteria (see Table 11 for the revised SL evaluation). Based on this revised evaluation, the detected concentration of 4,4'-DDD at MW-103 (i.e., 0.012 mg/kg) does not exceed the revised SL of 0.28 mg/kg, based on the protection of drinking water criteria.

The concentration of the SVOC n-nitrosodiphenylamine also exceeded the SL at one sample location (MW-106, between 13.5 and 14.5 feet BGS) with a detection of 110 µg/kg. As with 4,4'-DDD, the SL for n-nitrosodiphenylamine in soil (i.e., 100 µg/kg) was based on the protection of groundwater (3-phase model) evaluation using surface water criteria inputs (see Tables 6 and 7). N-nitrosodiphenylamine was also not identified in any samples collected at the hydraulically downgradient, off-Site groundwater wells located near the river during the four quarters of sampling. Similar to the revised SL evaluation noted above for 4,4'-DDD, the detected concentration of n-nitrosodiphenylamine (i.e., 110 µg/kg) does not exceed the revised 3-phase model generated SL of 530 µg/kg, based on the protection of drinking water criteria (see Table 11 for the revised SL evaluation).

Based on the analytical results for the soil samples collected and analyzed as part of the supplement RI activities, and the evaluation of the results using SLs based on overall Site conditions, no Site-specific

COCs in soil are identified. Despite the absence of specific COCs for Site soil, and as discussed in Section 11.0, the redevelopment strategy for the Site will likely incorporate various impervious services (infrastructure, roadways, etc.) that will contain the soil in place. If Site remedial action is required, the focus will be impacts to groundwater and from LFG (i.e., methane), as discussed in the following sections.

8.2 GROUNDWATER

Groundwater samples were collected for analysis during four quarterly sampling events (September and December 2014, March and June 2015). Table 12 presents the chemicals that were identified as Site COPCs based on the evaluation summarized in Section 7.2; per that evaluation, PCBs and PAHs are not considered Site-specific COCs in groundwater.

Metals, both total and dissolved, were the most frequently detected compounds in the groundwater samples collected during the four quarterly monitoring events. In particular, SL exceedances of dissolved metals (primarily arsenic, iron, manganese, and sodium) were identified in samples collected at locations across the area of investigation, and are the compounds that warrant evaluation for potential offsite migration. Area-wide SL exceedances were also identified with respect to pH values, predominately those values below the SL range (i.e., <6.5). The SL exceedances of these dissolved metals and pH at locations across the area of investigation is evidence of area-wide reducing conditions in the aquifer linked to the presence of both wood debris and MSW. The dissolved metals (arsenic, iron, manganese, and sodium) and pH are considered COCs in groundwater at the Site.

Nitrate exceeded the SL in only one quarterly sample (March 2015) at one hydraulically downgradient location (MW-8); the results of the other three quarters at this location were either non-detect at the RL or very low detections above the RL. The nitrate SL is based on protection of drinking water criteria. This one nitrate SL exceedance during the course of supplemental RI activities (1 SL exceedance out of 102 samples analyzed) is statistically insignificant. Nevertheless, nitrate is considered a Site-specific COC in groundwater at the Site.

The VOC VC was detected above the SL at Site well MW-106 during the December 2014 sampling event only; VC was not detected above the RL during the other three quarters sampled at this location. VC was also not detected above the RL in the samples from any other Site or hydraulically downgradient well. Similar to nitrate, the VC SL was only exceeded in 1 out of 102 samples analyzed, which can be considered statistically insignificant. Similar to the reevaluation presented in Section 8.1 to revise soil SLs (when appropriate), the groundwater VC SL can be revised based on protection of drinking water criteria (see Tables 6 and 12). However, the detected concentration at MW-106 (0.38 µg/L) also exceeds the revised SL for VC (0.20 µg/L). Therefore, VC remains a Site-specific COC in groundwater.

The SVOC n-nitrosodiphenylamine was detected above the groundwater SL in one Site well (MW-106) during each of two quarters of sampling; the sample results at this location for the other two quarters were non-detect at the RL. N-nitrosodiphenylamine was not detected at any other of the Site or hydraulically downgradient wells during the four quarters of groundwater sampling. Similar to the approach noted above for VC, the SL for n-nitrosodiphenylamine can be revised based on protection of drinking water criteria (see Tables 6 and 12). The revised SL is 18 µg/L; neither instance of n-nitrosodiphenylamine detection at MW-106 exceeds this revised SL. Therefore, n-nitrosodiphenylamine is not considered a Site-specific COC in groundwater.

Additionally, BEHP was the most frequently detected SVOC in the area of investigation during the four quarters of groundwater sampling. However, SL exceedances for BEHP were identified in samples collected at locations within the Site (3 locations), and hydraulically upgradient (4 locations) and hydraulically downgradient (1 location) of the Site. In addition, SL exceedances of BEHP were only found in samples collected during the September and December 2014 quarterly sampling events; the samples from the same locations in the following two quarters were non-detect at the RL. As mentioned previously, BEHP is a widely used plasticizer, and is often identified as a cross-contaminant in laboratory analyses. The sporadic frequency of detections of the compound and their locations throughout the area of investigation indicate that the BEHP is likely linked to cross contamination versus actual Site conditions; therefore, BEHP is not considered a Site-specific COC in groundwater.

The pesticides 4,4'-DDD, 4,4'-DDT, and endosulfan II were detected above their SLs at Site well MW-103; only 4,4'-DDD exceeded the SL in all four of the quarterly samples. However, these three compounds did not exceed their corresponding SLs in the samples from any other of the Site or hydraulically downgradient wells. Similar to the reevaluation approach used for other compounds not exceeding their SLs at locations off Site, the SLs for these three compounds were revised based on protection of drinking water criteria (see Tables 6 and 12). The revised SLs for 4,4'-DDD, 4,4'-DDT, and endosulfan II are 0.3 µg/L, 0.3 µg/L, and 96 µg/L, respectively. The detected concentrations of these three compounds at MW-103 do not exceed their revised SLs based on protection of drinking water criteria. Therefore, these three pesticides are not considered Site-specific COCs in groundwater.

Table 12 summarizes the results of the evaluation process for the Site-specific COCs in groundwater. As noted on the table, dissolved metals (i.e., arsenic, iron, manganese, and sodium), pH, nitrate, and VC will be carried forward as COCs in groundwater for the Site and will be further evaluated in the next sections with respect to potential remedial action requirements.

8.3 LANDFILL GAS

As mentioned in Section 7.3, and based on the precedents set by the solid waste regulations, methane was the focus of the LFG evaluation during the supplemental RI activities at the Site. Comparison of the methane concentrations detected during the supplemental RI to the WAC 173-304-460(2) requirements indicates that methane concentrations exceed the LEL (i.e., 5.0 percent by volume criterion) within the Site boundary (i.e., GP-5, GP-12, GP-19, and GP-20), and at some locations along the Site's western, northwestern, and northern perimeter. However, the methane concentrations in the areas outside of the Site boundary are associated with the presence of wood debris and may be unrelated to former landfill activities. The 5.0 percent by volume criterion is not exceeded at the LFG probe locations to the south and east of the Site where no MSW or wood debris is located. Methane is present in soil vapors, likely due to MSW decomposition in the subsurface, and therefore, is considered a COC for the Site.

9.0 CONCEPTUAL SITE MODEL

The conceptual Site model (CSM) discussed in this section was developed based on available information regarding Site operational history, the Site's environmental setting, the environmental data collected during previous investigations and supplemental RI activities, and the understanding of contaminant fate and transport processes that could influence the migration of contaminants in the environment. The following sections discuss the components of the CSM, including chemical fate and transport, potential migration pathways, and potential receptors for contamination, all are considered in the context of the specific COCs identified for the Site. The CSM is presented on Figure 17.

9.1 CHEMICAL FATE AND TRANSPORT

The following section presents an overview of the fate and transport mechanisms for the COCs identified for the Site. Potential pathways and receptors are discussed in the following sections.

9.1.1 DISSOLVED METALS AND pH IN GROUNDWATER

As discussed in Sections 7.2.2 and 7.2.3, dissolved metals and pH were the analytes most frequently detected above their SLs in the groundwater samples collected within the area of investigation during the four quarters of supplemental RI groundwater sampling. The detected concentrations of selected dissolved metals and pH levels are shown on Figures 12 through 15. Elevated dissolved metals concentrations and low pH levels have also been consistently detected in historical groundwater samples, from sample locations both hydraulically upgradient and downgradient of the Site (see Appendix A, Tables A-3 and A-7).

Evaluation of the historical and supplemental RI dissolved metals and pH results indicates that the groundwater aquifer throughout the area of investigation is to some degree under reducing conditions resulting from the presence of wood debris and MSW. Oxygen is consumed during the natural degradation of solid waste and wood debris in the subsurface (by microbes present in the soil), and reducing conditions can be created. Under reducing conditions, some metals, which would otherwise normally be bound within the soil matrix, become mobile through precipitation into the dissolved phase. These reducing conditions also can affect pH levels. This is a biological process during which available electron acceptors are chemically reduced sequentially based on potential energy yield (oxygen, nitrate, manganese, iron, arsenic, and sulfate, as discussed below in Section 9.1.2), transitioning from an aerobic to anaerobic environment. As consumption of the electron acceptors continues during this natural attenuation process, the reducing conditions increase.

These natural attenuating and aquifer-reducing conditions can be observed in the area of investigation through evaluation of the conventionals and dissolved metals data (indicating a nitrate to iron/manganese-reducing environment) and associated field parameters collected during sampling [e.g., pH levels, depleted dissolved oxygen, negative oxidation reduction potential (ORP)]. The naturally aerobic (oxygen-rich) groundwater entering the Site from the west/northwest (hydraulically upgradient) has lower organic carbon content and dissolved metals concentrations (see Figures 14 and 15). As the groundwater moves first through the areas of buried wood debris located hydraulically upgradient of the Site and eventually through the areas of combined wood debris and MSW, the available oxygen/carbon in the aquifer is consumed creating reducing conditions in the aquifer. As the groundwater passes through the Site and leaves the area of combined wood debris and MSW, the reducing conditions begin to dissipate, the metals concentrations decrease, the pH levels increase, and the nitrate and sulfate concentrations start to rebound.

Stormwater infiltration at the Site is also a component of the reduced aquifer conditions identified within the area of investigation. As illustrated on Figure 17, stormwater infiltrates through the surface layers of wood debris, which are dispersed throughout the predominately unpaved area of investigation, and mobilizes this additional carbon source that subsequently influences reducing conditions and pH levels in the underlying groundwater aquifer.

The highest TOC concentrations in the area of investigation were at sampling locations hydraulically upgradient of the Site in the former Plywood Plant parcel. These higher TOC concentrations are co-located with the areas of the TPH-D and TPH-O contamination discussed in Section 7.2.1; the presence of the TPH contamination provides an additional source of carbon that can be mobilized by the infiltrating stormwater and flowing groundwater, and further accelerates the shift to reducing conditions in the area. The hydraulically cross-gradient areas to the south of the Site (e.g., MW-16 and MW-109, see Figures 14 and 15) do not appear to display the same influence of reducing conditions seen in other parts of the area of investigation, in part because of the lack of wood debris and MSW to provide an organic electron donor and the continued “fringe” influence of groundwater higher in oxygen content.

The aquifer reducing conditions discussed above are present area-wide due to the presence of wood debris at the hydraulically upgradient properties and the presence of combined wood debris and MSW at the Site. The reducing conditions in the groundwater aquifer could potentially be mitigated through source removal [i.e., removal of the material (wood debris/MSW) that is providing the electron donor (carbon)]. However, due to the size and complexity of the Site and the surrounding properties, mass removal of these materials is impracticable and would be at a substantial and disproportionate cost.

9.1.2 LANDFILL GAS

LFG was surveyed at, and in the vicinity of, the Site in January and June 2015 (see Section 7.3, Tables 10A and 10B, and Figure 16). LFG is generated by microbes during the anaerobic degradation of materials such as MSW and wood debris, and is composed primarily of methane, carbon dioxide, and water vapor. The amount of LFG produced, and the rate of LFG generation, is dependent on the type of waste, moisture content, and subsurface conditions. Depending on site conditions, LFG production can last from 20 years to more than 50 years (DHHS 2001). Methane concentrations measured in recent surveys at GP-19 and GP-20, the two LFG probes located within the Site (i.e., the extent of MSW), indicate that decomposition of the MSW is ongoing and that some level of LFG production is likely to continue into the near future.

No buildings occupy the Site and the LFG that is being generated passively escapes to the atmosphere. Based on the recent survey results (as discussed in Section 7.3), there is LFG unrelated to MSW decomposition that is also being produced by the wood debris buried in the vicinity of the Site and that is combined with the MSW in many locations. As development of the Site occurs, the design will likely need to consider potential strategies for the mitigation of LFG, or for control or removal of the source(s) for LFG production (i.e., MSW, wood debris), which as mentioned previously, is impracticable on a large scale.

9.1.3 OTHER CONTAMINANTS IN GROUNDWATER

The evaluation summarized in Section 8.2 and in Table 12 also identifies VC and nitrate as COCs in groundwater for the Site. Nitrate is completely soluble and moves readily with groundwater flow, but biodegrades (is denitrified) under slightly reduced aquifer conditions similar to those present within the area of investigation (Environment Agency 2005; ITRC 2000). As discussed in Section 9.1.1, nitrate is one of several electron acceptors that can be present in groundwater naturally or due to human activities. Starting with oxygen, which provides the greatest energy yield, bacteria use the electron acceptors in the following sequential order: oxygen, nitrate, manganese (IV), iron (III), sulfate, and carbon dioxide. Only oxygen is used preferentially over nitrate because of its oxidative states and the energy obtained by the bacteria. This means that nitrate is rapidly denitrified in anaerobic aquifers (similar to the conditions observed within the Site's reduced-condition aquifer) where oxygen is depleted or scarce. Therefore, nitrate in groundwater within the area of investigation will be readily consumed by subsurface bacteria as long as the reducing conditions persist.

VC is an intermediate breakdown product of trichloroethene (TCE)-reductive dechlorination. VC moves readily with groundwater due to a much lower affinity for adsorbing to aquifer soils than its parent product TCE, which means it can be relatively mobile in groundwater (EPA 2000). VC is further reduced

by naturally occurring bacteria to the non-toxic end products ethene and ethane, and then to carbon dioxide and water under highly-reduced, methanogenic aquifer conditions; VC can also be degraded under aerobic conditions (Parsons 2004). The concentrations of methane measured at the LFG probes and the reduced aquifer conditions in groundwater suggest that methanogenic reduced-aquifer conditions occur at the Site and within the area of investigation, and provide an environment suitable for the reduction of VC to its non-toxic end products.

9.2 POTENTIAL EXPOSURE PATHWAYS

As part of the RI process, potential exposure pathways are identified for both human and environmental receptors. The evaluation of potential exposure pathways and receptors is presented in Table 13, and the Site-specific CSM is illustrated on Figure 17. Based on Site-specific current and/or potential future land use scenarios, the potential exposure pathways to the Site's COCs include the following:

- **Ingestion of groundwater.** Although Site groundwater is not considered a potable water source and is not being used for drinking water purposes, the shallow groundwater beneath the Site does not meet the MTCA criteria for non-potability; therefore, potential ingestion of groundwater is considered a potential current and future Site-specific pathway, as discussed below and in Section 6.1.

A restrictive covenant was placed on the Mill Facility parcels at the time of sale prohibiting residential use (Boise Cascade Corporation 2004); a similar restriction is anticipated for the Site parcel. Currently, groundwater is not being used as a drinking water source and no drinking water wells are in operation at or hydraulically downgradient of the Site. City ordinances currently require that all new lots and development be served by a public water supply that will satisfy fire flow and domestic service [Ord. 2001-13 § 20, 2001: Ord. 98-64 § 1 (part), 1998]. The City's permit-review process, which will be a part of planning for redevelopment of the Site, will ensure compliance with relevant ordinances. Therefore, as future redevelopment strategies are developed for the Site, groundwater will continue to not be used as a drinking water source.

- **Groundwater discharge to surface water.** Discharge of contaminated groundwater to surface water could affect receptors in surface water, including freshwater organisms and the human consumption of freshwater organisms, and is therefore considered a current and potential future pathway. Evaluation of the groundwater data for the Site (as discussed in Sections 7.2 and 8.2) demonstrates that only dissolved metals (i.e., iron, manganese, and sodium) concentrations exceed SLs at the sample locations near or adjacent to the river. As discussed previously, the SLs for dissolved iron, manganese, and sodium are based on secondary MCL criteria (i.e., aesthetics and taste). Dissolved arsenic concentrations exceeded the SL in samples collected from locations across the entire area of investigation, upgradient, downgradient, and within the Site. However, none of the dissolved arsenic concentrations detected during the four quarterly sampling events are greater than either the federal drinking water criterion or state background value under consideration by Ecology. Since river water in the immediate vicinity of the Site is not used as a drinking water source, the detected dissolved metals concentrations do not threaten a potential receptor in the river based on this current and potential future pathway.

- **Direct contact with and ingestion of soil/MSW.** Potential pathways include contact with contaminated surface soil and exposure to subsurface soil/MSW during construction that involves intrusive activities; therefore, direct contact with soil/MSW is considered a current and potential future pathway.
- **Soil transport via stormwater runoff to surface water.** Contaminated surface soil transport via stormwater runoff to downgradient surface water could introduce contaminants that could affect receptors and, therefore, stormwater runoff is considered a current and potential future pathway. The majority of the area of investigation is unpaved and the limited volume of stormwater received annually in the Yakima area currently infiltrates through the Site's surface. The majority of the Site's surface is covered with varying layers of wood debris, which greatly limits the amount of potential soil available to be entrained in stormwater if runoff were to occur during major storm events. Although this can be considered a current and potential future pathway, its relevance as a pathway is considered insignificant given overall Site conditions and the low potential for contaminated-media migration.
- **Soil vapor/LFG.** LFG (e.g., methane) generated from existing MSW or combined MSW and wood debris has the potential to volatilize and migrate into future Site structures. Although structures are currently not in place at the Site, the potential for future development of the Site requires that vapor intrusion be considered as a potential future pathway. As with the City's limitations on the use of groundwater as drinking water in the area of investigation, the City's permit and design approval process will require that future development incorporates an appropriate level of soil vapor/LFG management into the planning and design process.
- **Leaching from soil/MSW to groundwater.** Contaminants in soil/MSW can leach to groundwater in unpaved areas where stormwater infiltrates through shallow contaminated soil or at locations where soil/MSW contamination is in direct contact with groundwater. Since the Site is currently unpaved, leaching of potential contaminants from soil/MSW to groundwater is considered a current and potential future pathway.

9.3 POTENTIAL RECEPTORS

The potential exists for human and ecological receptors to be exposed to affected media at the Site. The potential human receptors that may be exposed to affected soil, groundwater, and/or LFG at the Site include the following:

- **Site commercial/industrial workers.** Potential exposure of Site workers to contaminants in surface soil could occur through ingestion, dermal contact, and/or inhalation of particulates prior to Site development, but potential exposure will be limited once likely development is completed following the installation of pavement and other impervious surfaces (capping/containment). Workers in potential future structures at the Site could be exposed to LFG through potential vapor intrusion into the buildings; however, appropriate future structures can be designed to effectively manage and/or eliminate this potential exposure.
- **Site construction workers.** Similar to the potential exposure of Site commercial and/or industrial workers, potential exposure of Site construction workers to contaminants in surface and subsurface soil could occur through ingestion, dermal contact, or inhalation of particulates and through dermal contact with groundwater. A similar receptor scenario for LFG, as noted above, is also applicable to Site construction workers.

Ecological receptors may also be exposed to affected Site media. Potential ecological receptors include:

- **Terrestrial plants and animals.** Based on an existing restrictive covenant for the Site (Boise Cascade Corporation 2004), future land use at the Site is limited to industrial and commercial activities. Future development will likely cover the Site's ground surface with structures and pavement, which will preclude contact by terrestrial plants and animals with potentially contaminated soil.

Per Ecology's Opinion Letter (Ecology 2014), a terrestrial ecological evaluation (TEE) was required for the Site. A TEE has been prepared considering current Site-specific conditions (Attachment 1). The TEE concludes that the MTCA TEE exclusion assessment criteria cannot be met for the Site. However, the consideration of the relevant risk-based screening criteria, the conditional point of compliance (i.e., 6 feet BGS), and the likelihood of redevelopment and required future institutional controls (e.g., restrictions on subsurface activities, etc.) allows the Site to meet the TEE simplified evaluation procedural criteria and no further evaluation is required.

The TEE was provided as an attachment to the RI Interim Data Report previously submitted to Ecology for review and consideration (Landau Associates 2015). Ecology's Opinion Letter specific to that report (Ecology 2015) noted that if the proposed institutional controls are placed on the Site with a conditional point of compliance (6 feet BGS), Site conditions will meet the TEE simplified evaluation procedure criteria for no further evaluation. The 2015 Opinion Letter also notes that the conditional point of compliance of 6 feet BGS may or may not be necessary depending on the specific type of barrier (e.g., containment) installed (Ecology 2015).

10.0 CLEANUP STANDARDS

Based on the guidelines established under MTCA, cleanup standards consist of: 1) CLs, as defined by regulatory criteria, which are determined to be adequately protective of human health and the environment, and 2) the point(s) of compliance at which the CLs must be met for each media of concern. The Site-specific cleanup standards that are developed are then used to set the basis for establishing remedial action objectives (RAOs) for potential remedial actions, which will be evaluated as part of the Feasibility Study (FS) process.

10.1 DEVELOPMENT OF CLEANUP LEVELS

Various compounds were detected at sample locations across the area of investigation during the supplemental RI activities (September 2014 through January 2015), including in soil, groundwater, and as components of LFG (particularly methane). The SLs discussed in this report (see Section 6.0) are initially considered as applicable CLs, with the levels for various analytes raised to the laboratory QL (applied as the PQL) or natural- or regional-background concentrations, per the guidelines under MTCA, as appropriate.

CLs for affected media developed under MTCA represent the concentration of a compound that is protective of human health and the environment for identified potential receptors and exposure pathways, based on the highest beneficial use (HBU) and the reasonable maximum exposure (RME) for each affected media. The process for developing CLs consists of identifying the HBU and RME for affected media, determining which compounds represent the greatest risk to human health or the environment, and then determining the CLs for those compounds.

10.1.1 SOIL AND MUNICIPAL SOLID WASTE

As discussed in Section 6.2, the soil SL evaluation considered criteria protective of groundwater in those instances where RI groundwater SL exceedances did not empirically demonstrate that concentrations in soil are adequately protective of groundwater. Even with this consideration, no Site-specific COCs in soil were identified through the evaluation conducted in Section 8.1. Furthermore, probable redevelopment scenarios for the Site and its vicinity include installation of impervious surfaces and infrastructure (e.g., roadways, buildings, etc.) that in time will essentially contain (i.e., cap) the soil and surface layer of wood debris at the Site. Based on these considerations, Site-specific soil CLs have not been developed for the Site.

Due to its nature as a waste material, the MSW was not directly characterized as part of this RI; specific characterization of the MSW would occur if removal is included as part of Site redevelopment.

Remediation alternatives to be evaluated for the Site could address the MSW and shallow (near surface) soil through removal; however, isolation from the environment (e.g., landscaping, earthen capping, infrastructure, etc.) and institutional controls, or a combination of these two elements, is anticipated to be the most practicable approach for the Site. Therefore, soil CLs protective of direct contact, leaching, and/or erosion are not established for the Site.

10.1.2 GROUNDWATER

Based on the Site-specific COC evaluation (Section 8.0; Table 12), and an understanding of the potential receptors and exposure pathways (Section 9.0; Table 13), the HBU for groundwater is considered ingestion of groundwater as drinking water. Based on this groundwater HBU, the RME for groundwater consumption of drinking water is by commercial/industrial and/or Site construction workers. As a result, federal MCL criteria, Washington State Board of Health MCL criteria, MTCA Method A criteria, and MTCA Method B formula values were evaluated as potential CLs for Site-specific COCs in groundwater.

As discussed in Section 8.0, Site-specific COCs include dissolved metals (i.e., arsenic, iron, manganese, and sodium), pH, nitrate, and VC. VC was detected above its corresponding SL at only one Site location (MW-106) in only one of the four quarters sampled (December 2014); VC was not detected in any samples collected from hydraulically downgradient (i.e., off Site) sampling locations. Given the HBU and RME established for Site groundwater, and the restricted use status of the Site (commercial/industrial use only), protection of drinking water criteria for VC (i.e., 2.0 µg/L) can be used to establish the CL for VC. The single detection of VC (0.38 µg/L) is above its SL (0.20 µg/L), but does not exceed the proposed CL for VC of 2.0 µg/L.

Similar to VC, nitrate was detected above its corresponding SL at only one location (MW-8) in only one of the four quarters samples (March 2015). MW-8 is located adjacent to and hydraulically downgradient of the Site; nitrate was only detected sporadically above its RL in samples from Site wells. Based on the HBU and RME for Site groundwater, protection of drinking water criteria for nitrate (i.e., 10 µg/L) can be used to establish the CL for the compound; the one SL exceedance of nitrate at MW-8 (27 µg/L) also exceeds the proposed CL.

CLs can also be developed for the Site-specific COCs that relate to the area-wide groundwater aquifer reducing conditions [i.e., dissolved metals (arsenic, iron, manganese, sodium) and low pH]. Based on the HBU and RME established for Site groundwater, and the restriction for land use at the Site (i.e., commercial/industrial use only), consideration of protection of drinking water criteria (primarily federal and state MCLs) is appropriate for establishing proposed CLs for these COCs. Therefore, dissolved iron and manganese CLs would be established as the state-based secondary MCLs (based on aesthetics) of 300 µg/L and 50 µg/L, respectively. The dissolved sodium CL would be established based on the federal

Treatment Technique Action Level MCL of 20,000 µg/L and the pH CL would be based on the federal secondary MCL range of 6.5 to 8.5. For dissolved arsenic, although the MTCA Method A criteria for unrestricted land uses should be taken into consideration as part of the CL evaluation process, the Site's anticipated restriction to commercial/industrial uses makes consideration of the federal and state-based MCL of 10 µg/L appropriate as the Site-specific CL for dissolved arsenic.

Based on the Site-specific CLs established for dissolved metals and pH, the CL levels are not met for these COCs in groundwater at all locations within the Site, with the exception of the proposed dissolved arsenic CL. As noted previously, the identified aquifer reducing conditions are area-wide and not limited to the within the Site itself; therefore, the CLs for dissolved iron, manganese, and sodium, in addition to the pH CL, are currently exceeded at locations hydraulically upgradient, hydraulically downgradient, and within the Site. Addressing these proposed CL exceedances given the area-wide conditions may be impracticable and other options to eliminate the potential pathway-receptor relationship (e.g., deed restriction on groundwater as a drinking water sources, etc.) will need to be considered.

10.1.3 LANDFILL GAS

As discussed in Section 6.3, the MTCA cleanup regulation [WAC 173-340-750(3)(b)(iii)] provides a Method B CL for methane in indoor and outdoor air of 10 percent of the LEL (0.5 percent by volume); this value is considered protective of human health and the environment. However, because LFG data is predominately gathered from probes extending into the shallow subsurface, the generated data may not be representative of potential indoor and outdoor air quality. Therefore, solid waste regulatory criteria are also used to evaluate SLs for LFG data; these criteria provide relevant compliance standards that are considered generally applicable and protective for contaminant migration or exposure, in the absence of other directly applicable regulations.

WAC 173-304-460(2) provides the following standards, which often are identified as SLs for LFG:

- Methane gas generated at a landfill must not exceed 25.0 percent of the LEL in potential future structures (1.25 percent methane by volume);
- Methane gas must not exceed the LEL for methane at the property (i.e., Site) boundary (5.0 percent methane by volume);
- The concentration of methane gas must not exceed 100 ppm in offsite structures.

Based on current Site conditions (i.e., no buildings or structures at the Site), the second criterion noted above was established as the SL for consideration of LFG concentrations during the supplemental RI activities. Therefore, this same criterion can appropriately be established as the proposed CL for methane at the Site (i.e., 5.0 percent methane by volume). Concentrations of methane do not exceed this CL at the eastern and southern boundaries of the Site. This CL is exceeded at locations within the Site, and at locations to the west, northwest, and north of the Site. However, these latter LFG probe locations are

installed in areas with documented buried wood debris and the measured methane concentrations cannot readily be linked to generation by the MSW. As with the reducing aquifer conditions, the methane gas is also an area-wide issue and not solely linked to the presence of buried MSW.

Given that methane gas concentrations currently vent passively to the atmosphere at the Site, the proposed CL based on 5.0 percent methane by volume is appropriate. However, as the Site is redeveloped, a secondary CL based on MTCA Method B CL criteria for indoor and outdoor air of 10.0 percent of the LEL (0.5 percent methane by volume) will also be applicable to the Site pending the specifics of plans for Site redevelopment. The proposed CL level of 5.0 percent methane by volume (the LEL) will still be applicable at the Site's boundary in areas where buildings and infrastructure are not constructed.

10.2 POINTS OF COMPLIANCE

Under MTCA, the point of compliance is the location on the Site where the CLs must be attained. Ultimately, the point(s) of compliance for the Site-specific COCs and media of concern will be selected by Ecology and presented in the Site's Cleanup Action Plan (CAP), as appropriate. However, as part of the overall Site evaluation process, proposed point(s) of compliance are evaluated in this section with respect to potential remedial strategies that may be applicable for the Site and that will be evaluated as part of the FS.

10.2.1 SOIL

The proposed point of compliance for soil, as established in WAC 173-340-740(6), will be throughout the Site (i.e., the extent of MSW). MTCA recognizes that if containment is included as part of a remedial strategy, the soil CLs will typically not be met throughout the Site [WAC 173-340-740(6)(f)]. However, MTCA also recognizes that these cleanup actions may still comply with overall Site-specific cleanup standards. As noted previously, Site-specific soil COCs and corresponding proposed CLs have not been identified for the Site. Nevertheless, future redevelopment strategies will include provisions for the containment (i.e., capping) of the areas of surface soil and wood debris within the Site's boundary.

10.2.2 GROUNDWATER

Based on the Site-specific CSM and the evaluation process conducted as part of this supplemental RI, the proposed points of compliance for groundwater will be groundwater within the boundary of the Site, and at the hydraulically downgradient edge of the Site. Monitoring at the downgradient edge of the Site will be conducted to demonstrate that potential groundwater contaminants are not leaving the Site (i.e., the extent of MSW) at concentrations above the proposed CLs identified in Section 10.1.2. However, based on the data evaluated during the supplemental RI, Site-specific groundwater CLs are currently not being

attained and may not be able to be met at all locations. Therefore, other strategies (e.g., deed restrictions, etc.) will likely be used to reduce or eliminate the risk from the groundwater pathway based on the criteria used to establish the proposed groundwater CLs (i.e., protection of groundwater as drinking water criteria).

10.2.3 LANDFILL GAS (METHANE)

Based on current Site conditions, the proposed point of compliance for LFG compounds (particularly methane), per WAC 173-304-460(2), is the perimeter of the Site. Compliance with the CL for this proposed point of compliance will be evaluated through measurements using subsurface LFG probes. As discussed in Section 8.3 and 10.1.3, currently measured methane concentrations meet the CL for this proposed point of compliance at the southern and eastern Site boundaries, but not along the western, northwestern, and northern Site boundaries. Areas of buried wood debris to the west and north of the Site are also producing measurable volumes of methane that cannot be readily associated with production from the buried MSW. The specific source(s) for methane production along the Site's western, northwestern, and northern boundaries will be difficult to define.

A secondary proposed point of compliance for future Site redevelopment (e.g., roadways, buildings, etc.) would be throughout the Site in those areas where new infrastructure is constructed. In likely future scenarios, this secondary (future) point of compliance would be attained if indoor and outdoor air concentrations are below the secondary CL of 0.5 percent methane by volume, as discussed in Section 10.1.3. Measurements to assess compliance with this secondary CL and the associated point of compliance will be evaluated through indoor/outdoor air sampling. Future infrastructure designs will need to incorporate sufficient methane gas mitigation measures to ensure that the secondary CL is attained in indoor environments (i.e., the future point of compliance). The City's building permit and review approval process will require that future development planning incorporate the LFG mitigation measures necessary to attain the secondary CL at the future point of compliance.

11.0 REMEDIAL ACTION AND FEASIBILITY STUDY CONSIDERATIONS

Ultimately, Site-specific RAOs will be established as part of the FS process. They will define the goals of potential remediation that would be protective of human health and the environment. The RAOs can be either action-specific (not focused on a specific COC criterion) or media-specific (incorporating COC-specific CL requirements and points of compliance). Potential remedial alternatives specific to the Site that will be evaluated in the FS must achieve the RAOs to be considered as viable remedial actions.

Potential remedial action requirements will be evaluated as part of a focused FS once the Supplemental RI Report is finalized (documenting media-specific COCs and cleanup standards are established, etc.). Based on the evaluation completed through this supplemental RI process and with an understanding of existing Site conditions, some preliminary considerations can be made concerning potential remedial action scenarios that may be applicable for the Site. These potential scenarios will be further refined through completion of a focused FS following finalization of the Supplemental RI Report.

11.1 SOIL

Based on the evaluation completed as part of this supplemental RI, no Site-specific soil COCs have been identified for the Site; therefore, remedial action scenarios whose specific focus is addressing Site soil contamination will likely not be evaluated. As discussed previously, the strategy for potentially addressing soil at the Site will be based on a remedial action's ability to comply with the Site's groundwater cleanup standards and/or to meet standards designed to minimize human or environmental exposure to potentially affected soil (e.g., containment, etc.). Based on the results of the supplemental RI sampling and existing Site conditions, exposure to potentially affected soil will be managed through institutional controls/restrictive covenants that will limit activities that might expose potential receptors (i.e., commercial/industrial and/or construction workers) to the surface soil and the underlying MSW (e.g., prohibiting drinking water wells, managing excavation during redevelopment, etc.). As mentioned previously, a restrictive covenant prohibiting residential use of the Mill Facility parcels has previously been established (Boise Cascade Corporation 2004) and a similar restriction is anticipated for the Site parcel as redevelopment strategies are finalized.

With the likelihood of future Site redevelopment, areas of potential soil contamination (and MSW) will be contained over time as infrastructure (e.g., roadways, buildings, paved lots, etc.) are constructed. Potential contaminated soil may be addressed through removal as part of construction for redevelopment, but not for soil remediation only. Future redevelopment will require City permit approval (e.g., building construction, grading, subsurface work, etc.), which will help manage necessary institutional controls and deed restriction requirements. Planning for subsurface work would need to accommodate for worker health

and safety concerns and incorporate the necessary material handling and disposal requirements (as applicable), depending on the location and the depth of future excavation activities.

11.2 GROUNDWATER

Based on the evaluation completed during this supplemental RI, including the Site-specific groundwater COCs identified and the proposed groundwater cleanup standards for the Site, only a limited number of compounds have been identified that may require potential remedial alternative evaluation. In particular, these include dissolved metals (i.e., arsenic, iron, manganese, and sodium) and low pH levels associated with groundwater aquifer reducing conditions. However, these reduced aquifer conditions are area-wide, and are not solely associated with the Site (i.e., the extent of MSW alone). The most direct approach to eliminate the catalysts that are creating these reducing conditions would be source removal (i.e., wood debris and MSW). However, based on the size of the Site and the surrounding properties, as well as the volume of materials involved, removal of materials on this scale would be impracticable and disproportionately cost prohibitive.

If some action is warranted to address the dissolved metals concentrations and low pH levels, other alternatives could be considered. As outlined in the Site-specific CSM (identified pathways and potential receptors relationships, etc.), the dissolved metals and pH CLs are based on protection of drinking water criteria. Given that groundwater at and downgradient of the Site will not be used as a drinking water source (based on anticipated use restrictions and established City ordinance), institutional controls/deed restrictions (combined with long-term monitoring) will likely be sufficient to address the impacts to groundwater identified at the Site.

11.3 LANDFILL GAS

As discussed throughout this Supplemental RI Report, potential remediation requirements to address LFG compounds (specifically methane concentrations) will be linked to the specifics of future Site redevelopment scenarios and considerations. Elevated methane concentrations are an area-wide issue and not specifically associated with impacts from buried MSW within the Site. Buried wood debris within the Site boundary and on adjacent parcels is also contributing to the elevated methane concentrations measured throughout the area of investigation.

Based on existing Site conditions (e.g., no buildings or structures, etc.) no immediate remedial action to specifically address methane concentrations may be required. However, potential remedial alternatives aimed at addressing the other media of concern and future redevelopment scenarios under consideration could influence LFG exposure pathways at the Site and require consideration of some level of LFG mitigation to address newly created pathways. As noted previously, potential redevelopment

scenarios for the Site will require City review and approval. This required review and approval process will ensure that any plans for redevelopment incorporate the necessary LFG mitigation measures.

11.4 FEASIBILITY STUDY CONSIDERATIONS

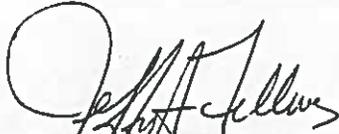
Upon finalization and approval of this Supplemental RI Report, a focused FS report will be prepared to evaluate potential remedial action alternatives that may be appropriate based on the CSM, the identified Site-specific COCs, and their associated cleanup standards. RAOs will be established, site units will be identified (as appropriate), and remedial technologies will be screened for potential applicability and effectiveness. As mentioned previously, traditional remedial strategies (e.g., excavation/source removal, etc.) would likely help mitigate the identified Site-specific COCs and conditions affecting contaminant occurrence and migration (i.e., elevated methane concentrations, reduced aquifer conditions); however, due to the size and complexity of the Site, implementation of these strategies may be impracticable and cost prohibitive. Nevertheless, the focused FS will evaluate the various remedial technologies available to manage the Site contamination, based on the methodology outlined under MTCA.

12.0 USE OF THIS REPORT

This Supplemental Remedial Investigation Report has been prepared for the exclusive use of City of Yakima and its designated representatives for specific application to the Closed City of Yakima Landfill Site. No other party, except the Washington State Department of Ecology, is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau Associates. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau Associates, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

This document has been prepared under the supervision and direction of the following key staff.

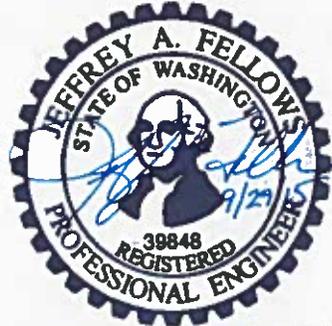
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13.0 REFERENCES

- Boise Cascade Corporation. 2004. *Declaration of Covenants and Obligations*. February 11.
- Boise Cascade Corporation. 1990. Application for Disposal Site Permit for Boise Cascade Corporation, Yakima, Washington. June 3.
- CH2M Hill. 1996. Letter Report: *Interstate 82 Gateway Project Disposal of Landfill Refuse*. Prepared for Yakima County Health District. January 24.
- City of Yakima. 2015. City of Yakima Zoning & Land Use Information. Available at: <http://www.yakimawa.gov/services/planning/zoning-land-use-information/>
- City of Yakima. 1996. Letter: *Interstate I-82 Gateway Project – January 11, 1996 Meeting Regarding Landfill and Wetland Issues*. From City of Yakima to Washington State Department of Ecology. January 22.
- DHHS. 2001. *Landfill Gas Primer: An Overview for Environmental Health Professionals*. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, Division of Health Assessment and Consultation. November.
- Ecology. 2015. Letter: *Re: Further Action at the Following Site: Site Name: Interstate 82 Exit 33A Yakima City Landfill; Site Address: 805 N. 7th St., Yakima, WA 98901 (Parcels 191318-41001 and 191318-42001); Facility/Site No.: 1927; VCP Project No.: CE0406*. From Matthew Durkee, Washington State Department of Ecology to Joan Davenport, City of Yakima. June 9.
- Ecology. 2014. Letter: *Regarding Further Action at Interstate 82 Exit 33A Yakima City Landfill, 805 N. 7th St., Yakima (Parcels 191318-41001 and 191318-42001)*. From Matthew Durkee, Washington State Department of Ecology to Joan Davenport, City of Yakima. May 2.
- Ecology. 2010. *Draft Revisions MTCA Method A Groundwater Cleanup Levels*. Washington State Department of Ecology Toxics Cleanup Program, Policy & Technical Support Unit. June.
- Environment Agency. 2005. Attenuation of Nitrate in the Sub-Surface Environment. Science Report SC030155/SR2. Environment Agency of the United Kingdom.
- EPA. 2000. Engineering Approaches to In Situ Bioremediation of Chlorinated Solvents: Fundamentals and Field Applications. United States Environmental Protection Agency, Office of Solid Waste and Emergency Response. 542-R-00-008. July.
- ITRC. 2000. *Technology Overview – Emerging Technologies for Enhanced In Situ Biotenitrification (EISBD) of Nitrate-Contaminated Groundwater*. June.
- Landau Associates. 2015. *Remedial Investigation Interim Data Report – September 2014 through January 2015, Closed City of Yakima Landfill Site*. Prepared for the City of Yakima and submitted to the Washington State Department of Ecology. April 13.
- Landau Associates. 2014. *DRAFT Work Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington*. Prepared for the City of Yakima and submitted to the Washington State Department of Ecology. August 11.

Landau Associates. 2013. *Phase II Investigation, Yakima Mill Site, Triangular and Plywood Plant Parcels, Yakima, Washington*. November 26.

Landau Associates. 1998. *Final Report: Hydrogeologic Study and Groundwater Monitoring Plan, Boise Cascade Yakima Wood Products Complex, Yakima, Washington*. Prepared for Boise Cascade. December 17.

Parametrix. 2008. *Phase II Environmental Site Assessment, Former City of Yakima Municipal Landfill Site, Yakima, Washington*. October.

Parsons. 2004. *Principles and Practices of Enhanced Anaerobic Bioremediation of Chlorinated Solvents*. Prepared for Air Force Center of Environmental Excellence, Naval Facilities Engineering Service Center, and Environmental Security Technology Certification Program. August.

PTI. 1989. *Background Concentrations of Selected Chemicals in Water, Soil, Sediments, and Air of Washington State*. Prepared for the Washington State Department of Ecology. PTI Inc. Bellevue, Washington.

Schuster, J. 1994. *Geologic Map of the East Half of the Yakima 1:100,000 Quadrangle, Washington*. Compiled by J. Eric Schuster. Washington State Department of Natural Resources, Washington Division of Geology and Earth Resources. Open File Report 94-12. June.

SLR. 2014. Voluntary Cleanup Program Agreement and Application – Closed City of Yakima Landfill, Parcels 191318-41001 and 191318-42001, Yakima, Washington. Prepared on behalf of City of Yakima. February 19.

SLR. 2012. Letter Report: *Soil Vapor and Groundwater Sampling Report – May 2012 Event, Closed City of Yakima Landfill Site, Yakima, Washington*. July 17.

SLR. 2010. *Additional Investigation Report, Closed City of Yakima Landfill Site, Yakima, Washington*. March 17.

SLR. 2009. *Remedial Investigation Report, Closed City of Yakima Landfill Site, Yakima, Washington*. October 12.

SWANA. 1997. *Landfill Gas Operation & Maintenance Manual of Practice*. Solid Waste Association of North America. March.

usclimatedata website. 2015. *U.S. Climate Data for Yakima, Washington*. Available at: <http://www.usclimatedata.com/climate/yakima/washington/united-states/uswa0502>
Accessed on March 13.

USDA. 2002. *Successful Approaches to Recycling Urban Wood Waste*. Available at: <http://www.fpl.fs.fed.us/documnts/fplgtr/fplgtr133.pdf> General Technical Report FPL-GTR-133. United States Department of Agriculture, Forest Service, Forest Products Laboratory.

USGS. 1962. *Geology and Ground-Water Resources of the Ahtanum Valley, Yakima County, Washington*. Water-Supply Paper 1598. Washington.

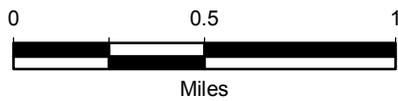
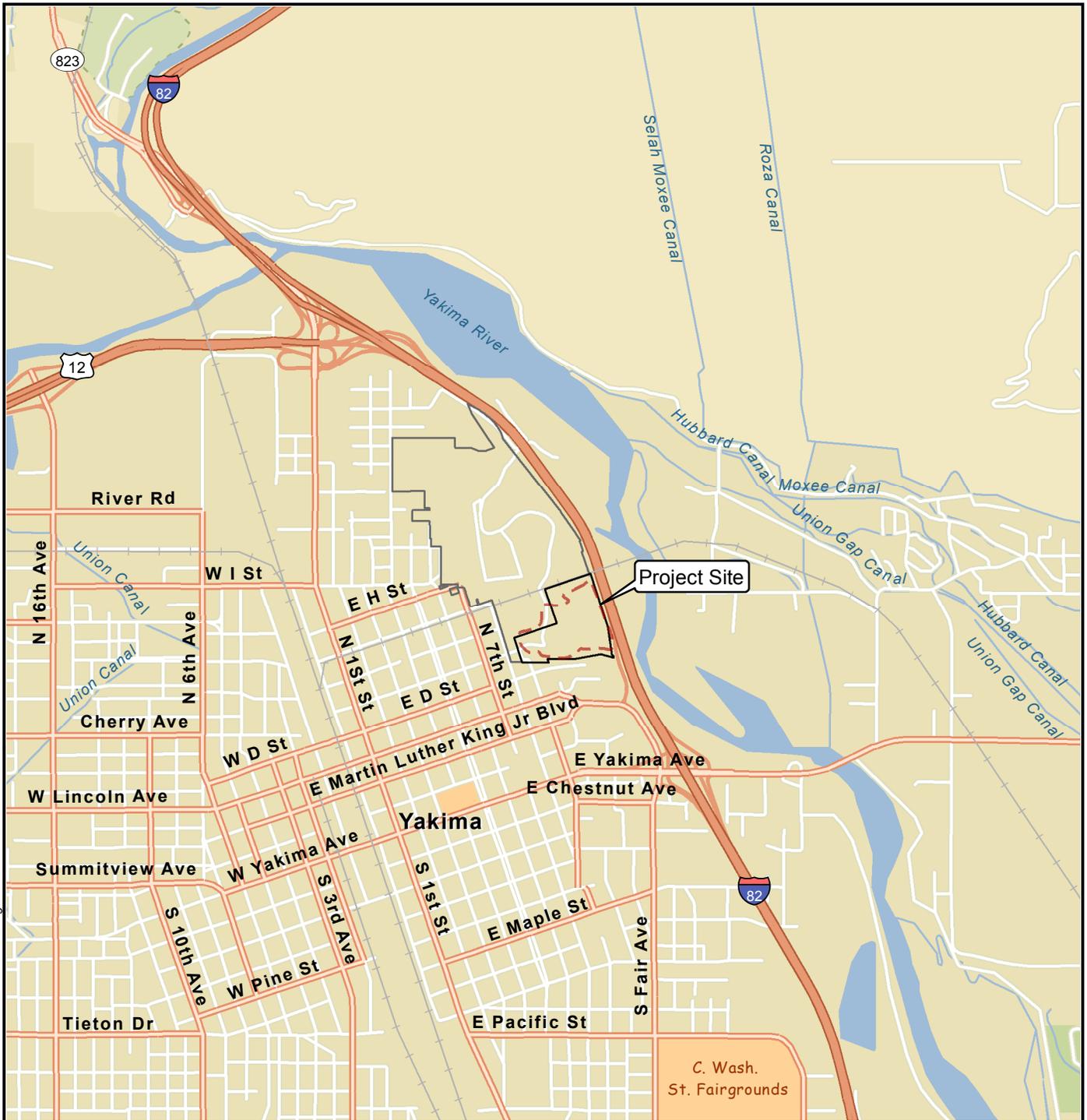
WDFW. 2011. *Management Recommendations for Washington's Priority Habitats: Managing Shrub-steppe in Developing Landscapes*. Available at: <http://wdfw.wa.gov/publications/01333/wdfw01333.pdf> Washington Department of Fish and Wildlife. November.

Yakima County GIS website. 2015. *Yakima County GIS – Washington Land Information Portal*. Available at:

http://yakimap.com/servlet/com.esri.esrimap.Esrimap?name=YakGISH&Left=1617034&Bottom=451688&Right=1660067&Top=484344&TAB=TabAssessor&DropDownOrtho=None&Contour=&Utilities=&FEMA=&CAO=&DropDownPlanning=Zoning&DropDownMapSize=Small&Cmd=ZI&ORTHO_LIST=None&MAP_SIZE=Small&click.x=296&click.y=236 Accessed on March 13.

Yakama Nation website. 2015. *Confederated Tribes and Bands of the Yakama Nation Wildlife, Range & Vegetation Resources Management Program*. <http://www.ynwildlife.org/aboutus.php> Accessed on March 13.

G:\Projects\1148\008\020\024\RI\F01\rcMap.mxd 3/30/2015 NAD 1983 StatePlane Washington North FIPS 4601 Feet

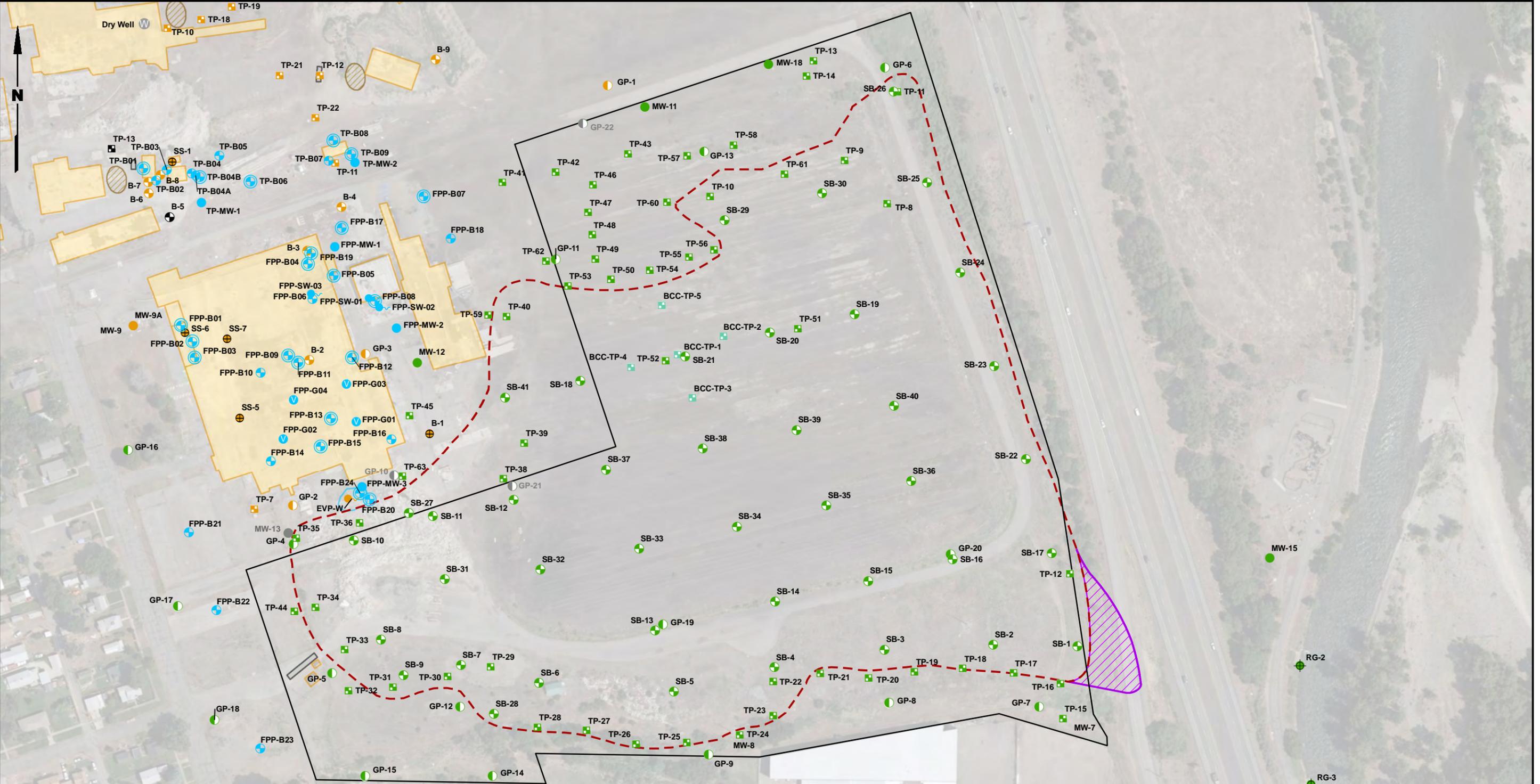


Data Source: Esri 2012

<p>Closed City of Yakima Landfill Site Yakima, Washington</p>	<p>Vicinity Map</p>	<p>Figure 1</p>
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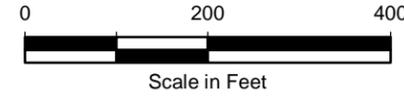


G:\Projects\1148\008\030\034\RV\F02\HistoricalInvestigationLocations.mxd 8/17/2015 NAD 1983 StatePlane Washington South FIPS 4602 Feet



Legend

- Monitoring Well - LAI 1998
- Monitoring Well - LAI 2013
- Soil Sample - LAI 2013
- Surface Water Sample - LAI 2013
- Soil Gas Sample - LAI 2013
- Gas Probe - Parametrix 2008
- Gas Probe - SLR 2009
- Gas Probe (Destroyed) - SLR 2009
- Monitoring Well - Parametrix 2008
- Monitoring Well - SLR 2009
- Monitoring Well (Destroyed) - SLR 2009
- River Gauge - SLR 2012
- Soil Boring - Parametrix 2008
- Soil Boring - SLR 2009
- Soil Boring - URS
- Soil Sample - Parametrix 2008
- Surface Water Sample - Parametrix 2008
- Test Pit - Parametrix 2008
- Test Pit - SLR 2009
- Test Pit - URS
- Test Pit - Boise Cascade 1985
- Water Well - URS
- Dry Well - URS
- PLSA Surveyed Parcel Boundaries (October 2014)
- Extent of Municipal Solid Waste
- WSDOT Refuse Contour - (0 ft; inferred) - 1996
- 2,000 cubic yards of material removed by WSDOT during ramp construction
- Building
- Former Building
- Existing or Former Pond
- Septic Tank
- Other Features



Data Sources: Yakima County GIS; Esri World Imagery; SLR; URS; Parametrix 2008; Boise 1985.

Notes

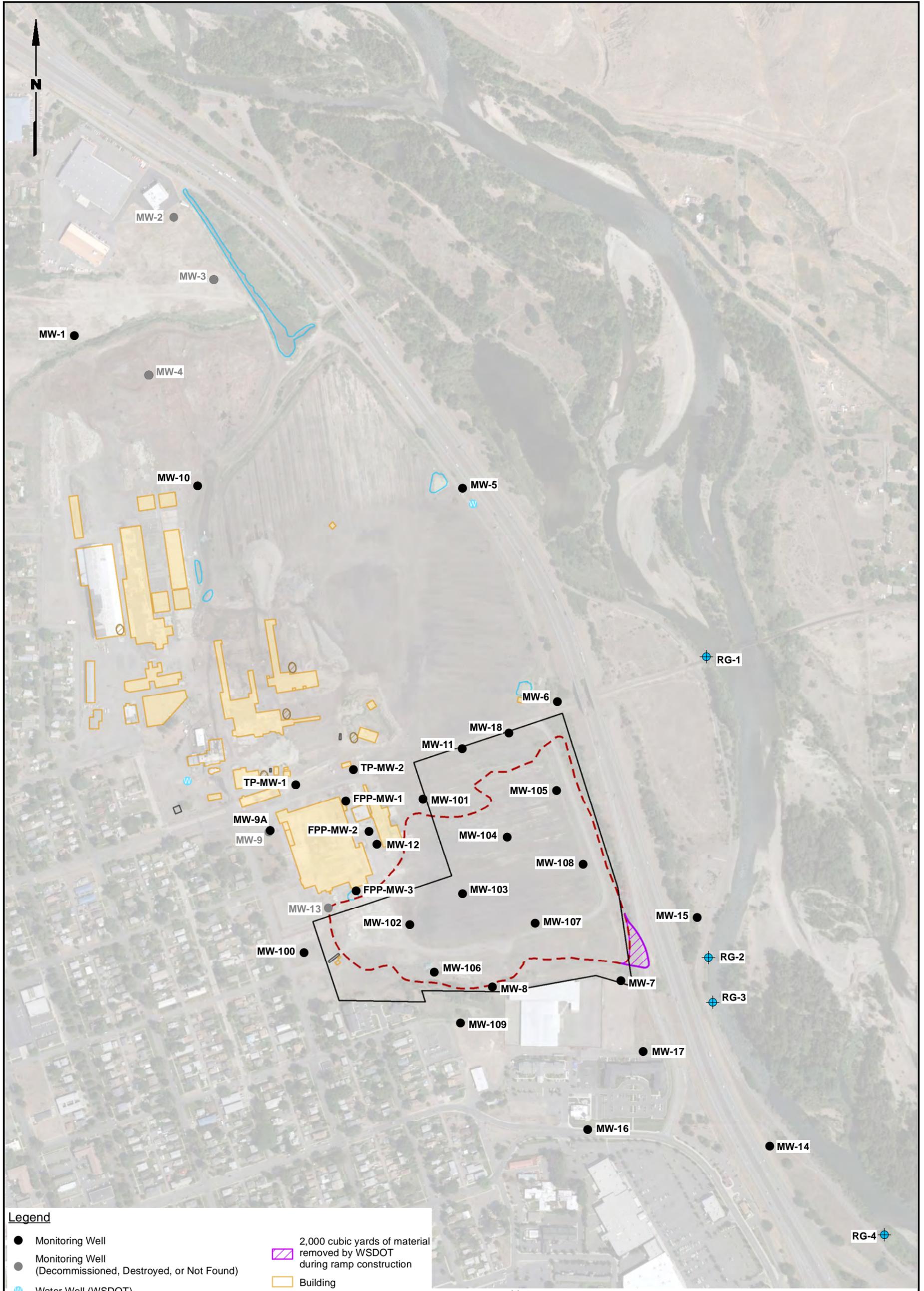
1. Locations of site features and sample locations are approximate.
2. WSDOT = Washington State Department of Transportation.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



Closed City of Yakima
Landfill Site
Yakima, Washington

Historical Investigation Locations

Figure
2



Legend

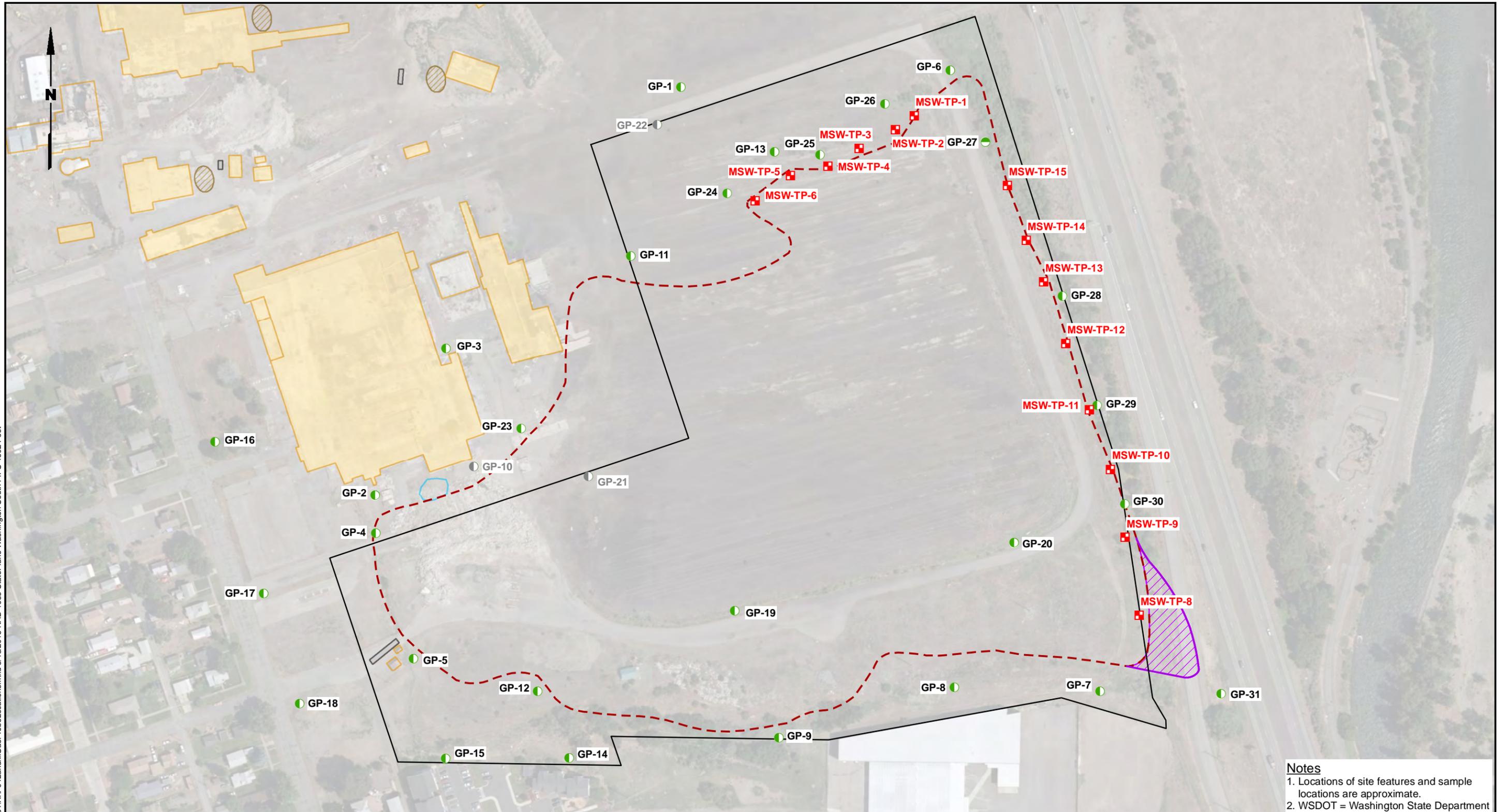
- Monitoring Well
- Monitoring Well (Decommissioned, Destroyed, or Not Found)
- ⊕ Water Well (WSDOT)
- ⊕ River Gauge
- PLSA Surveyed Parcel Boundaries (October 2014)
- - - Extent of Municipal Solid Waste
- WSDOT Refuse Contour - (0 ft; inferred) - 1996
- ▨ 2,000 cubic yards of material removed by WSDOT during ramp construction
- ▭ Building
- ▭ Former Building
- ▭ Existing or Former Pond
- ▭ Septic Tank
- ▭ Other Features

Notes

1. Locations of site features and sample locations are approximate.
2. WSDOT = Washington State Department of Transportation.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

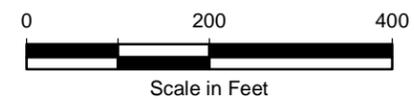
Data Sources: Yakima County GIS; Esri World Imagery; SLR; URS; Parametrix 2008; Boise 1985.

G:\Projects\1148\008\030\034\RV\F04\LandfillGasProbeLocations.mxd 8/18/2015 NAD 1983 StatePlane Washington South FIPS 4602 Feet



Legend

- MSW Test Pit Explorations (October 2014)
- Soil Sample Only - No Gas Probe Installed
- Gas Probe - 2009
- Gas Probe (Destroyed)
- PLSA Surveyed Parcel Boundaries (October 2014)
- - - Extent of Municipal Solid Waste
- WSDOT Refuse Contour - (0 ft; inferred) - 1996
- ▨ 2,000 cubic yards of material removed by WSDOT during ramp construction
- ▭ Building
- ▭ Former Building
- ▭ Existing or Former Pond
- ▨ Septic Tank
- ▭ Other Features

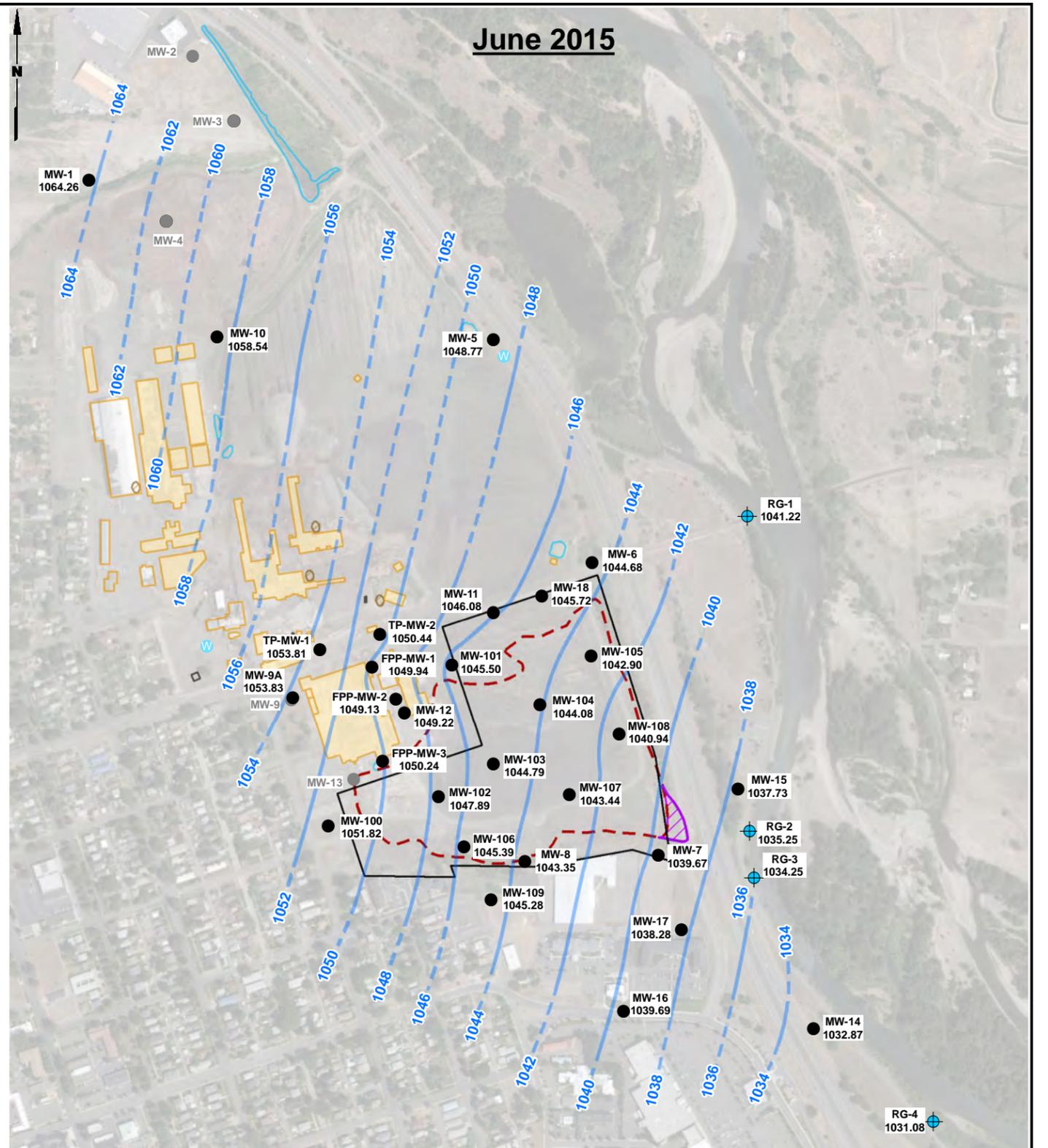
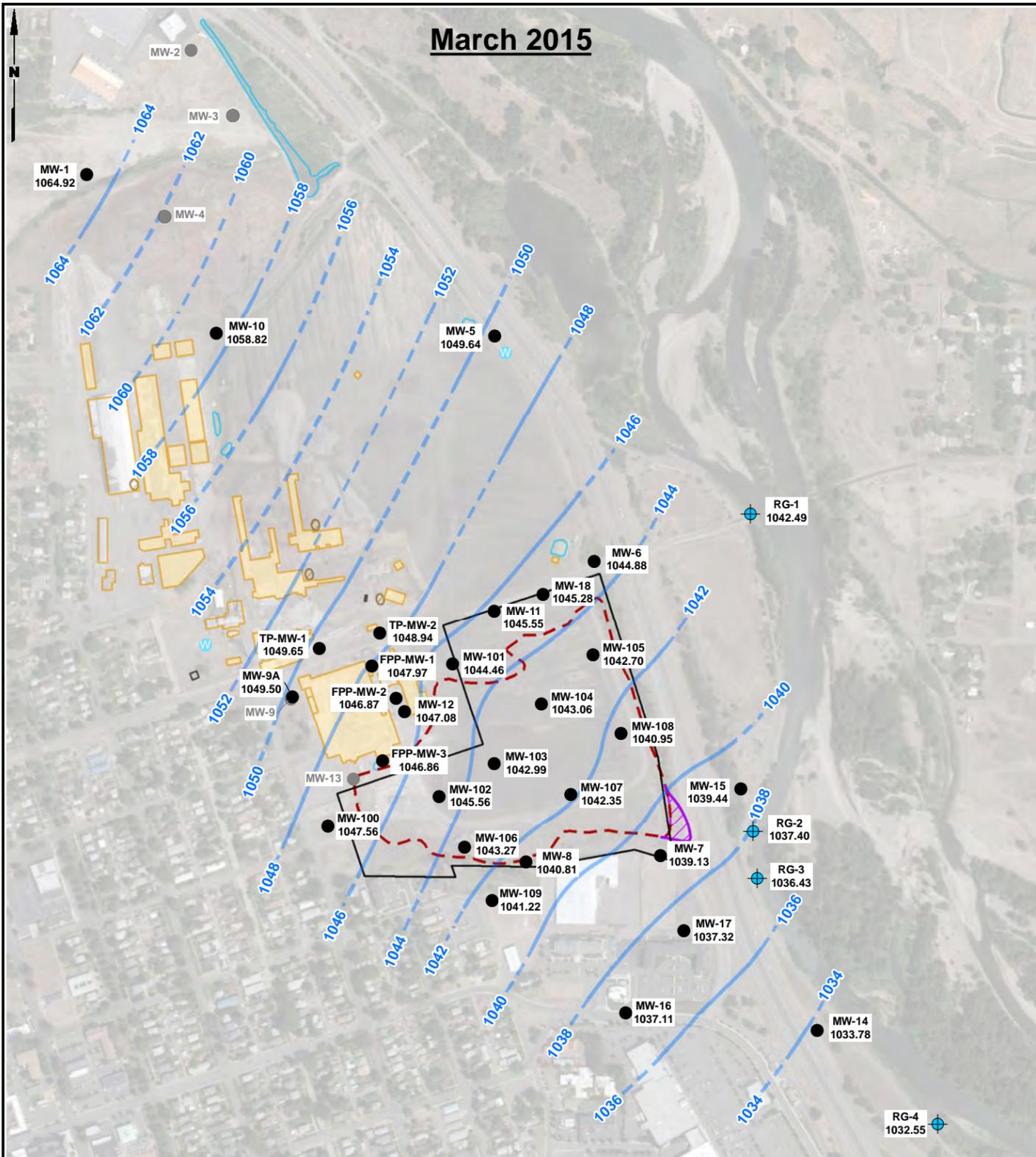


Data Sources: Yakima County GIS; Esri World Imagery; SLR; URS; Parametrix 2008; Boise 1985.

Notes

1. Locations of site features and sample locations are approximate.
2. WSDOT = Washington State Department of Transportation.
MSW = Municipal Solid Waste.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

G:\Projects\1148\008\03\034\RV\F06_1st2ndQ2015\GW.mxd 8/17/2015 NAD 1983 StatePlane Washington South FIPS 4602 Feet



Legend

- Monitoring Well
- Monitoring Well (Abandoned, Destroyed, or Not Found)
- ⊕ Water Well
- ⊕ River Gauge
- Groundwater Elevation and Contour (ft MSL)
- PLSA Surveyed Parcel Boundaries (October 2014)
- - - Extent of Municipal Solid Waste
- WSDOT Refuse Contour - (0 ft; inferred) - 1996
- Existing or Former Pond
- ▨ Septic Tank
- ▭ Other Features
- ▭ 2,000 cubic yards of material removed by WSDOT during ramp construction
- ▭ Building
- ▭ Former Building

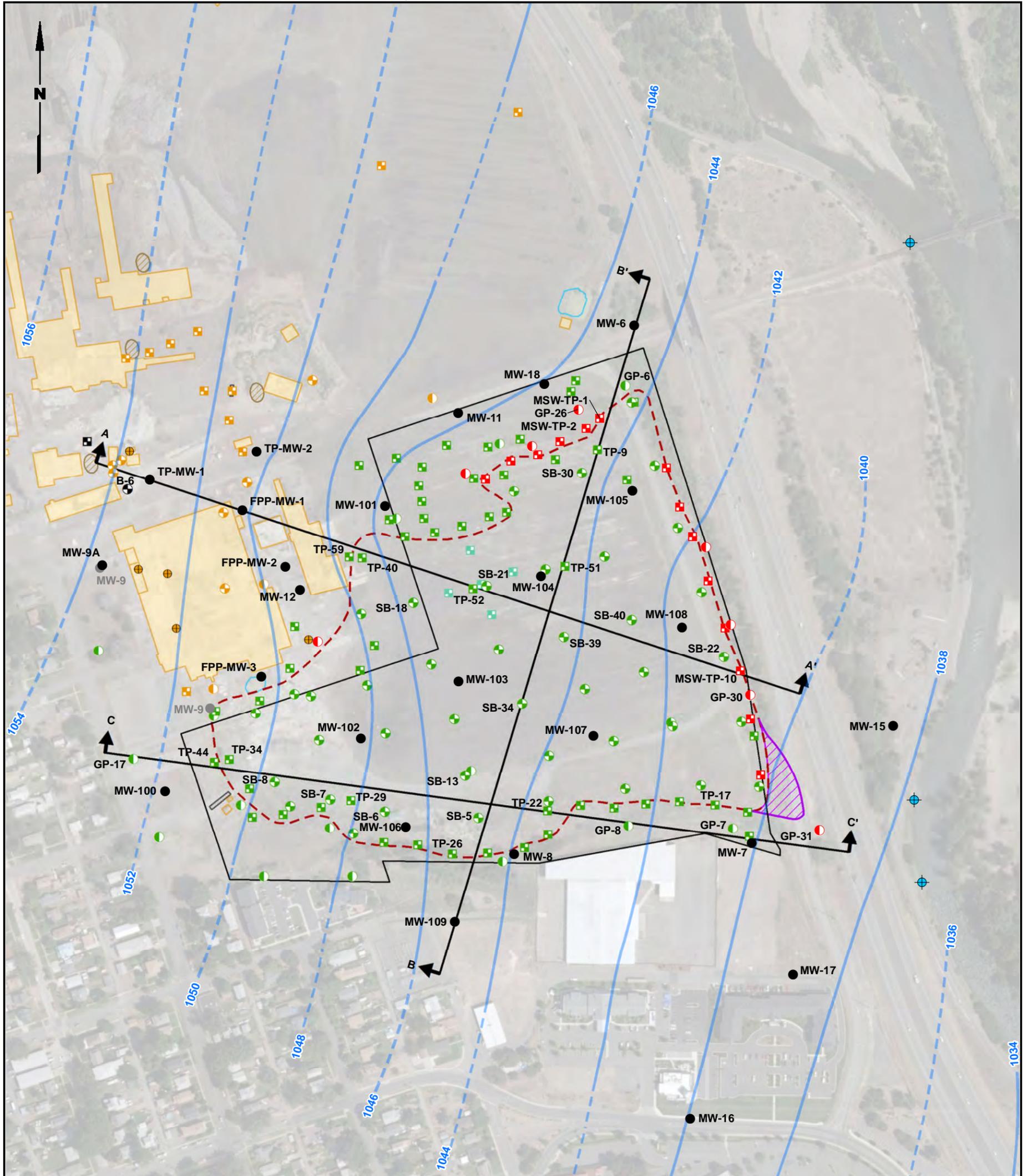
Notes

- River Gauges 1 through 4 (RG-1 through RG-4) were not used in generation of groundwater contours.
- WSDOT = Washington Department of Transportation
ft MSL = feet mean sea level.
- Locations of site features and sample locations are approximate.
- Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 700 1,400
Scale in Feet

Data Sources: Yakima County GIS; Esri World Imagery; SLR; URS; Parametrix 2008; Boise 1985.

Closed City of Yakima Landfill Site Yakima, Washington	Groundwater Elevation Contours March and June 2015	Figure 6
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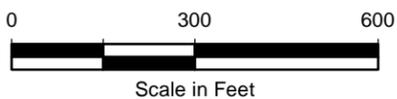
Legend

- | | |
|-------------------------------------------------------------|---------------------------------------------------------------------------|
| ● Gas Probe (October 2014 and April 2015) | — Groundwater Elevation and Contour (September 2014; ft MSL) |
| ■ MSW Test Pit Explorations (October 2014) | □ Tax Parcels |
| ● Monitoring Well | — PLSA Surveyed Parcel Boundaries (October 2014) |
| ● Monitoring Well (Decommissioned, Destroyed, or Not Found) | - - - Extent of Municipal Solid Waste |
| ⊕ River Gauge | — WSDOT Refuse Contour - (0 ft; inferred) - 1996 |
| ● Gas Probe - Parametrix 2008 | ▨ 2,000 cubic yards of material removed by WSDOT during ramp construction |
| ● Gas Probe - SLR 2009 | □ Building |
| ● Soil Boring - Parametrix 2008 | □ Former Building |
| ● Soil Boring - SLR 2009 | □ Existing or Former Pond |
| ● Soil Boring - URS | □ Septic Tank |
| ● Soil Sample - Parametrix 2008 | □ Other Features |
| ● Test Pit - Parametrix 2008 | ▲ Cross Section Location |
| ● Test Pit - SLR 2009 | |
| ● Test Pit - URS | |
| ● Test Pit - Boise Cascade 1985 | |

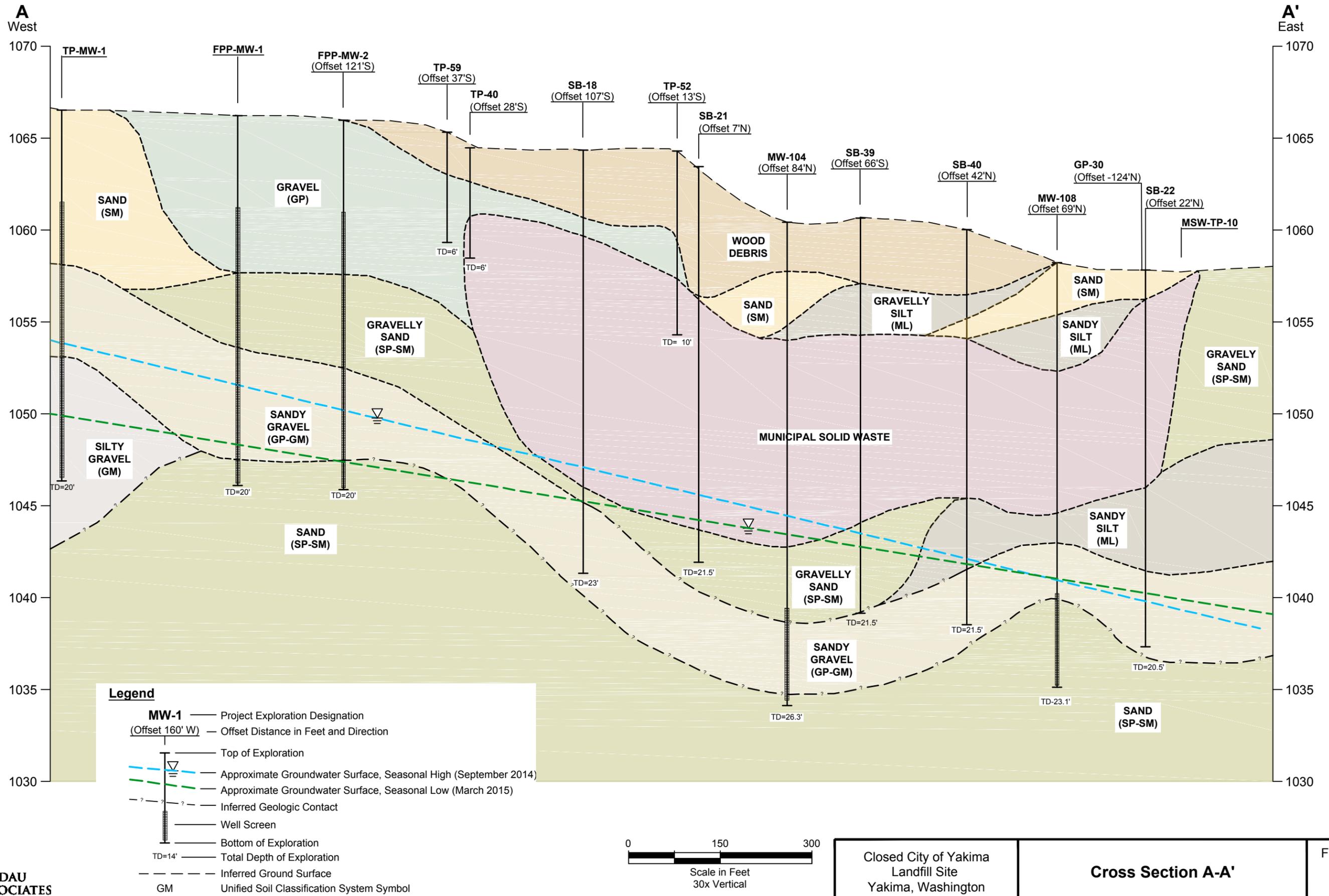
Notes

1. Labelled locations include the monitoring well network and those additional locations used to prepare the cross sections.
2. Locations of site features and sample locations are approximate.
3. WSDOT = Washington State Department of Transportation
ft MSL = feet mean sea level.
4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

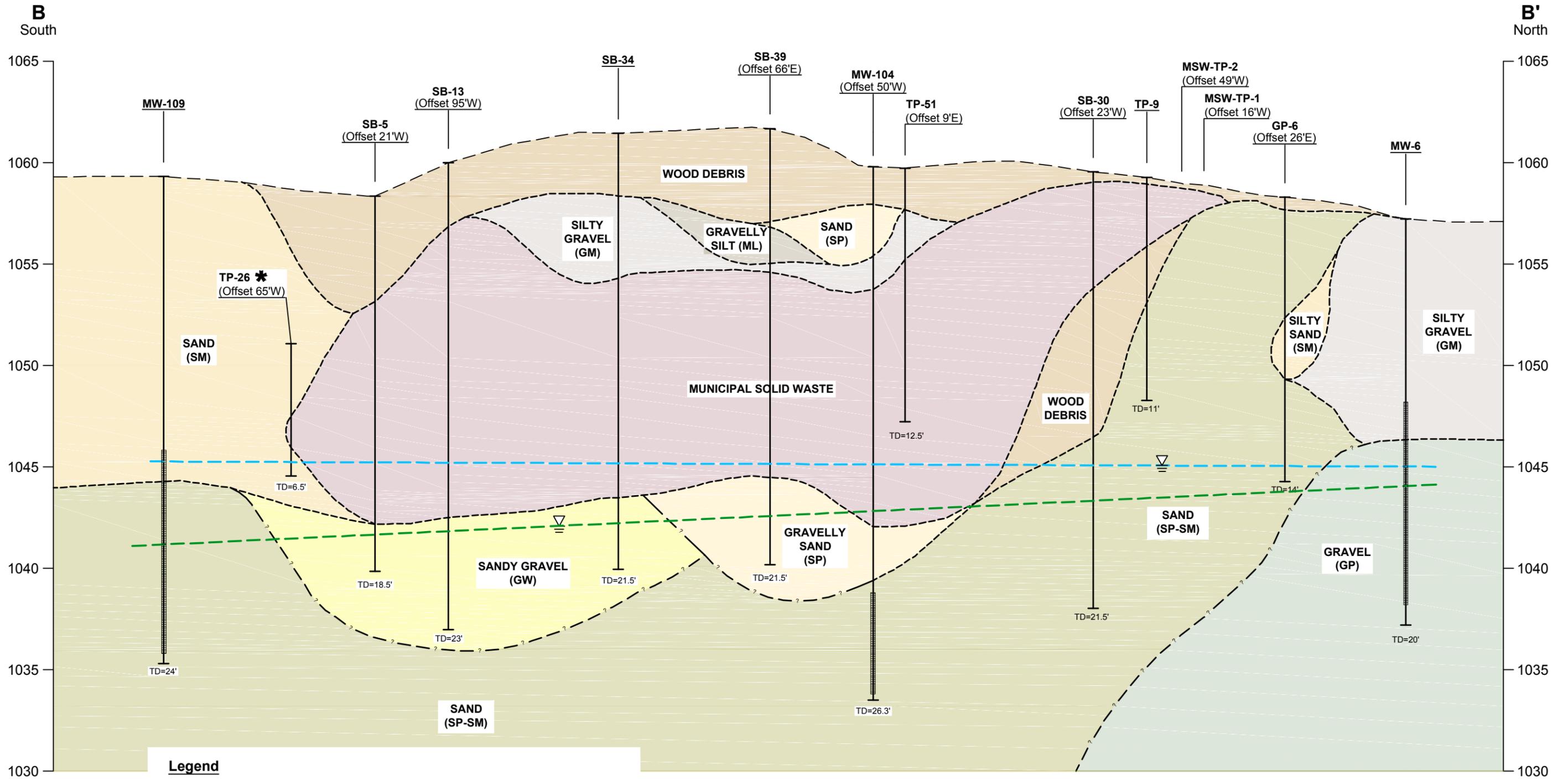
Data Sources: Yakima County GIS; Esri World Imagery; SLR; URS; Parametrix 2008; Boise 1985.



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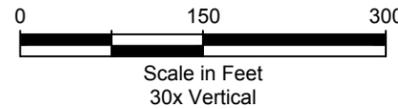
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Legend

- MW-1 — Project Exploration Designation
- (Offset 160' W) — Offset Distance in Feet and Direction
- Top of Exploration
- Approximate Groundwater Surface, Seasonal High (September 2014)
- Approximate Groundwater Surface, Seasonal Low (March 2015)
- - - Inferred Geologic Contact
- Well Screen
- Bottom of Exploration
- TD=14' — Total Depth of Exploration
- - - Inferred Ground Surface
- GM — Unified Soil Classification System Symbol

* Based on elevation at time of excavation (2009)



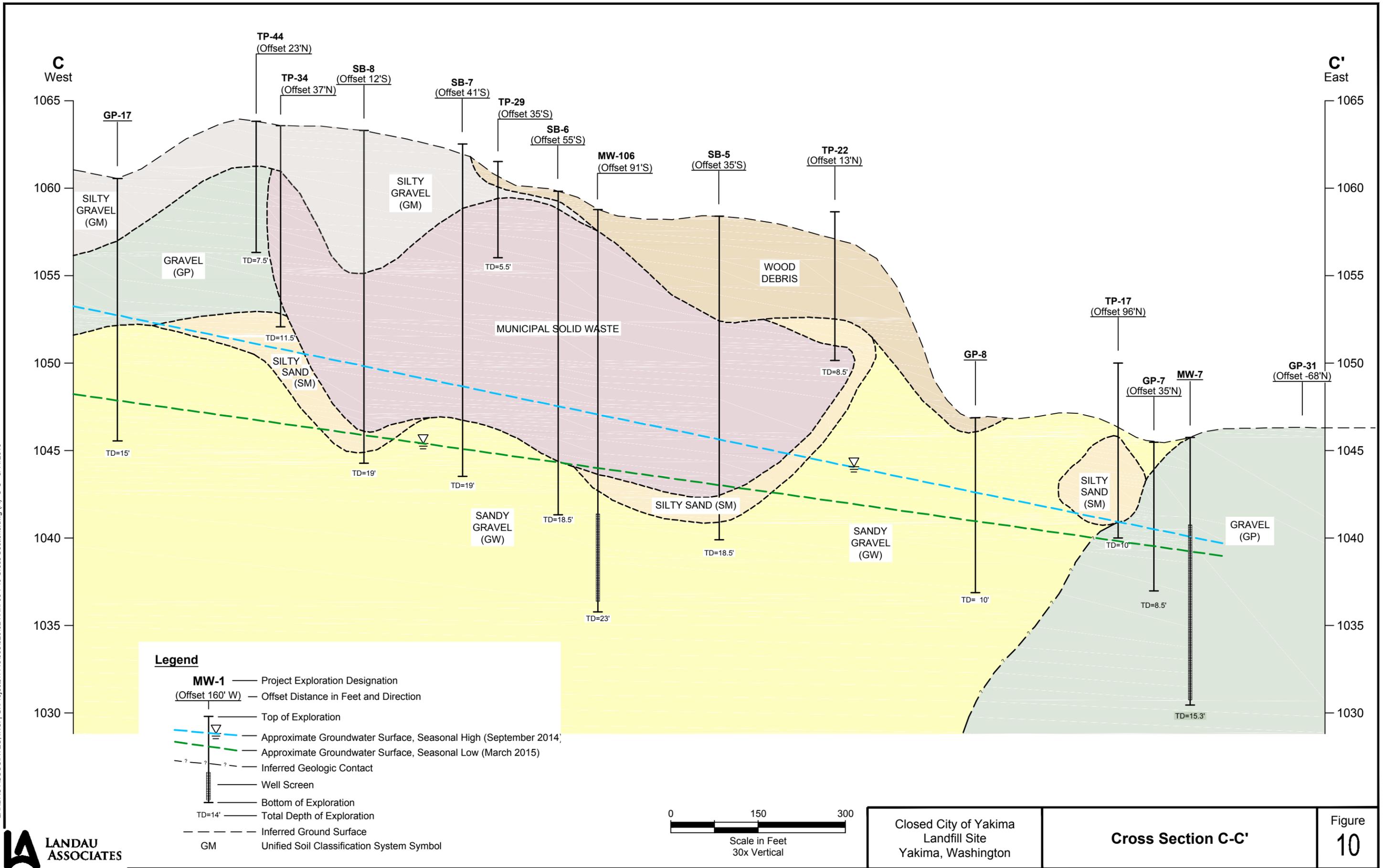
Closed City of Yakima
Landfill Site
Yakima, Washington

Cross Section B-B'

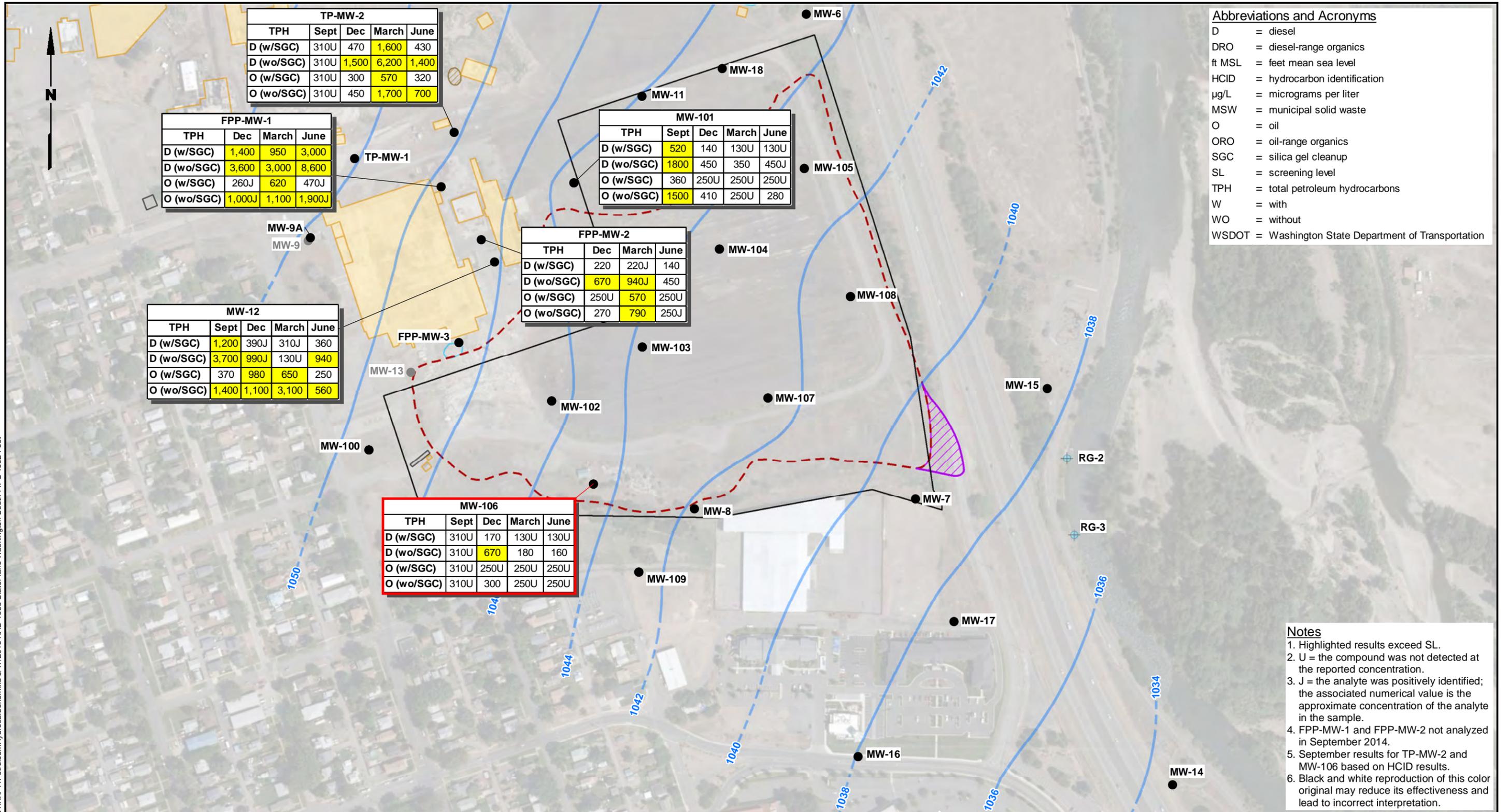
Figure
9



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G:\Projects\1148\008\030\034\RV\F\11\PetroleumHydrocarbons.mxd 8/17/2015 NAD 1983 StatePlane Washington South FIPS 4602 Feet



Abbreviations and Acronyms

- D = diesel
- DRO = diesel-range organics
- ft MSL = feet mean sea level
- HCID = hydrocarbon identification
- µg/L = micrograms per liter
- MSW = municipal solid waste
- O = oil
- ORO = oil-range organics
- SGC = silica gel cleanup
- SL = screening level
- TPH = total petroleum hydrocarbons
- W = with
- WO = without
- WSDOT = Washington State Department of Transportation

TP-MW-2

TPH	Sept	Dec	March	June
D (w/SGC)	310U	470	1,600	430
D (wo/SGC)	310U	1,500	6,200	1,400
O (w/SGC)	310U	300	570	320
O (wo/SGC)	310U	450	1,700	700

FPP-MW-1

TPH	Dec	March	June
D (w/SGC)	1,400	950	3,000
D (wo/SGC)	3,600	3,000	8,600
O (w/SGC)	260J	620	470J
O (wo/SGC)	1,000J	1,100	1,900J

MW-101

TPH	Sept	Dec	March	June
D (w/SGC)	520	140	130U	130U
D (wo/SGC)	1800	450	350	450J
O (w/SGC)	360	250U	250U	250U
O (wo/SGC)	1500	410	250U	280

FPP-MW-2

TPH	Dec	March	June
D (w/SGC)	220	220J	140
D (wo/SGC)	670	940J	450
O (w/SGC)	250U	570	250U
O (wo/SGC)	270	790	250J

MW-12

TPH	Sept	Dec	March	June
D (w/SGC)	1,200	390J	310J	360
D (wo/SGC)	3,700	990J	130U	940
O (w/SGC)	370	980	650	250
O (wo/SGC)	1,400	1,100	3,100	560

MW-106

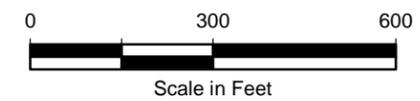
TPH	Sept	Dec	March	June
D (w/SGC)	310U	170	130U	130U
D (wo/SGC)	310U	670	180	160
O (w/SGC)	310U	250U	250U	250U
O (wo/SGC)	310U	300	250U	250U

- Notes**
1. Highlighted results exceed SL.
 2. U = the compound was not detected at the reported concentration.
 3. J = the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 4. FPP-MW-1 and FPP-MW-2 not analyzed in September 2014.
 5. September results for TP-MW-2 and MW-106 based on HCID results.
 6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Legend

- Monitoring Well
- Monitoring Well (Decommissioned or Destroyed)
- ⊕ River Gauge
- Groundwater Elevation and Contour (ft MSL)
- PLSA Surveyed Parcel Boundaries (October 2014)
- Extent of Municipal Solid Waste
- WSDOT Refuse Contour - (0 ft; inferred) - 1996
- ▨ 2,000 cubic yards of material removed by WSDOT during ramp construction
- ▨ Building
- ▨ Former Building
- ▨ Existing or Former Pond
- ▨ Septic Tank
- ▨ Other Features
- ▨ Red-Bordered Data Box Indicates Well Installed within Known Extent of MSW

Analyte	SL (µg/L)
DRO (w/SGC)	500
DRO (wo/SGC)	500
ORO (w/SGC)	500
ORO (wo/SGC)	500

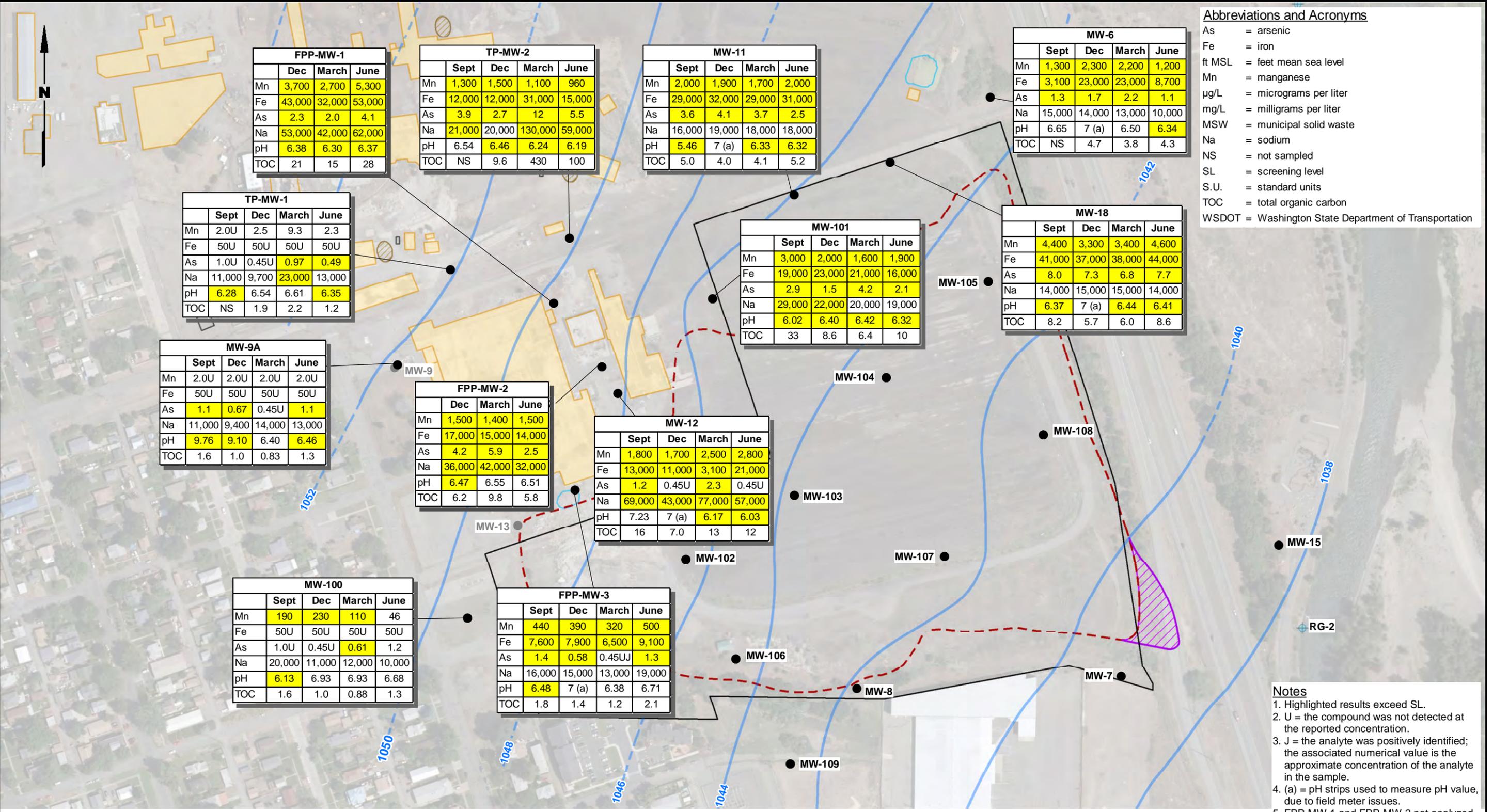


Data Sources: Yakima County GIS; Esri World Imagery; SLR; URS; Parametrix 2008; Boise 1985.

Closed City of Yakima Landfill Site Yakima, Washington	Petroleum Hydrocarbons in Groundwater Results (September 2014 to June 2015)	Figure 11
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G:\Projects\1148\008\030\034\RV\F\2DissolvedMetals\upgradient.mxd 8/18/2015 NAD 1983 StatePlane Washington South FIPS 4602 Feet



Abbreviations and Acronyms

- As = arsenic
- Fe = iron
- ft MSL = feet mean sea level
- Mn = manganese
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- MSW = municipal solid waste
- Na = sodium
- NS = not sampled
- SL = screening level
- S.U. = standard units
- TOC = total organic carbon
- WSDOT = Washington State Department of Transportation

FPP-MW-1				
	Dec	March	June	
Mn	3,700	2,700	5,300	
Fe	43,000	32,000	53,000	
As	2.3	2.0	4.1	
Na	53,000	42,000	62,000	
pH	6.38	6.30	6.37	
TOC	21	15	28	

TP-MW-2				
	Sept	Dec	March	June
Mn	1,300	1,500	1,100	960
Fe	12,000	12,000	31,000	15,000
As	3.9	2.7	12	5.5
Na	21,000	20,000	130,000	59,000
pH	6.54	6.46	6.24	6.19
TOC	NS	9.6	430	100

MW-11				
	Sept	Dec	March	June
Mn	2,000	1,900	1,700	2,000
Fe	29,000	32,000	29,000	31,000
As	3.6	4.1	3.7	2.5
Na	16,000	19,000	18,000	18,000
pH	5.46	7 (a)	6.33	6.32
TOC	5.0	4.0	4.1	5.2

MW-6				
	Sept	Dec	March	June
Mn	1,300	2,300	2,200	1,200
Fe	3,100	23,000	23,000	8,700
As	1.3	1.7	2.2	1.1
Na	15,000	14,000	13,000	10,000
pH	6.65	7 (a)	6.50	6.34
TOC	NS	4.7	3.8	4.3

TP-MW-1				
	Sept	Dec	March	June
Mn	2.0U	2.5	9.3	2.3
Fe	50U	50U	50U	50U
As	1.0U	0.45U	0.97	0.49
Na	11,000	9,700	23,000	13,000
pH	6.28	6.54	6.61	6.35
TOC	NS	1.9	2.2	1.2

MW-9A				
	Sept	Dec	March	June
Mn	2.0U	2.0U	2.0U	2.0U
Fe	50U	50U	50U	50U
As	1.1	0.67	0.45U	1.1
Na	11,000	9,400	14,000	13,000
pH	9.76	9.10	6.40	6.46
TOC	1.6	1.0	0.83	1.3

FPP-MW-2				
	Dec	March	June	
Mn	1,500	1,400	1,500	
Fe	17,000	15,000	14,000	
As	4.2	5.9	2.5	
Na	36,000	42,000	32,000	
pH	6.47	6.55	6.51	
TOC	6.2	9.8	5.8	

MW-12				
	Sept	Dec	March	June
Mn	1,800	1,700	2,500	2,800
Fe	13,000	11,000	3,100	21,000
As	1.2	0.45U	2.3	0.45U
Na	69,000	43,000	77,000	57,000
pH	7.23	7 (a)	6.17	6.03
TOC	16	7.0	13	12

MW-101				
	Sept	Dec	March	June
Mn	3,000	2,000	1,600	1,900
Fe	19,000	23,000	21,000	16,000
As	2.9	1.5	4.2	2.1
Na	29,000	22,000	20,000	19,000
pH	6.02	6.40	6.42	6.32
TOC	33	8.6	6.4	10

MW-18				
	Sept	Dec	March	June
Mn	4,400	3,300	3,400	4,600
Fe	41,000	37,000	38,000	44,000
As	8.0	7.3	6.8	7.7
Na	14,000	15,000	15,000	14,000
pH	6.37	7 (a)	6.44	6.41
TOC	8.2	5.7	6.0	8.6

MW-100				
	Sept	Dec	March	June
Mn	190	230	110	46
Fe	50U	50U	50U	50U
As	1.0U	0.45U	0.61	1.2
Na	20,000	11,000	12,000	10,000
pH	6.13	6.93	6.93	6.68
TOC	1.6	1.0	0.88	1.3

FPP-MW-3				
	Sept	Dec	March	June
Mn	440	390	320	500
Fe	7,600	7,900	6,500	9,100
As	1.4	0.58	0.45UJ	1.3
Na	16,000	15,000	13,000	19,000
pH	6.48	7 (a)	6.38	6.71
TOC	1.8	1.4	1.2	2.1

- Notes**
1. Highlighted results exceed SL.
 2. U = the compound was not detected at the reported concentration.
 3. J = the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 4. (a) = pH strips used to measure pH value, due to field meter issues.
 5. FPP-MW-1 and FPP-MW-2 not analyzed in September 2014.
 6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

- Legend**
- Monitoring Well
 - Monitoring Well (Decommissioned or Destroyed)
 - ⊕ River Gauge
 - Groundwater Elevation and Contour (ft MSL)
 - PLSA Surveyed Parcel Boundaries (October 2014)
 - - - Extent of Municipal Solid Waste
 - WSDOT Refuse Contour - (0 ft; inferred) - 1996
 - ▨ 2,000 cubic yards of material removed by WSDOT during ramp construction
 - ▭ Building
 - ▭ Former Building
 - ▭ Existing or Former Pond
 - ▭ Septic Tank
 - ▭ Other Features
 - ▭ Red-Bordered Data Box Indicates Well Installed within Known Extent of MSW

Analyte	Units	SL
Mn	µg/L	50
Fe	µg/L	300
As	µg/L	0.45
Na	µg/L	20,000
pH	S.U.	<6.5 or >8.5
TOC	mg/L	--



Data Sources: Yakima County GIS; Esri World Imagery; SLR; URS; Parametrix 2008; Boise 1985.

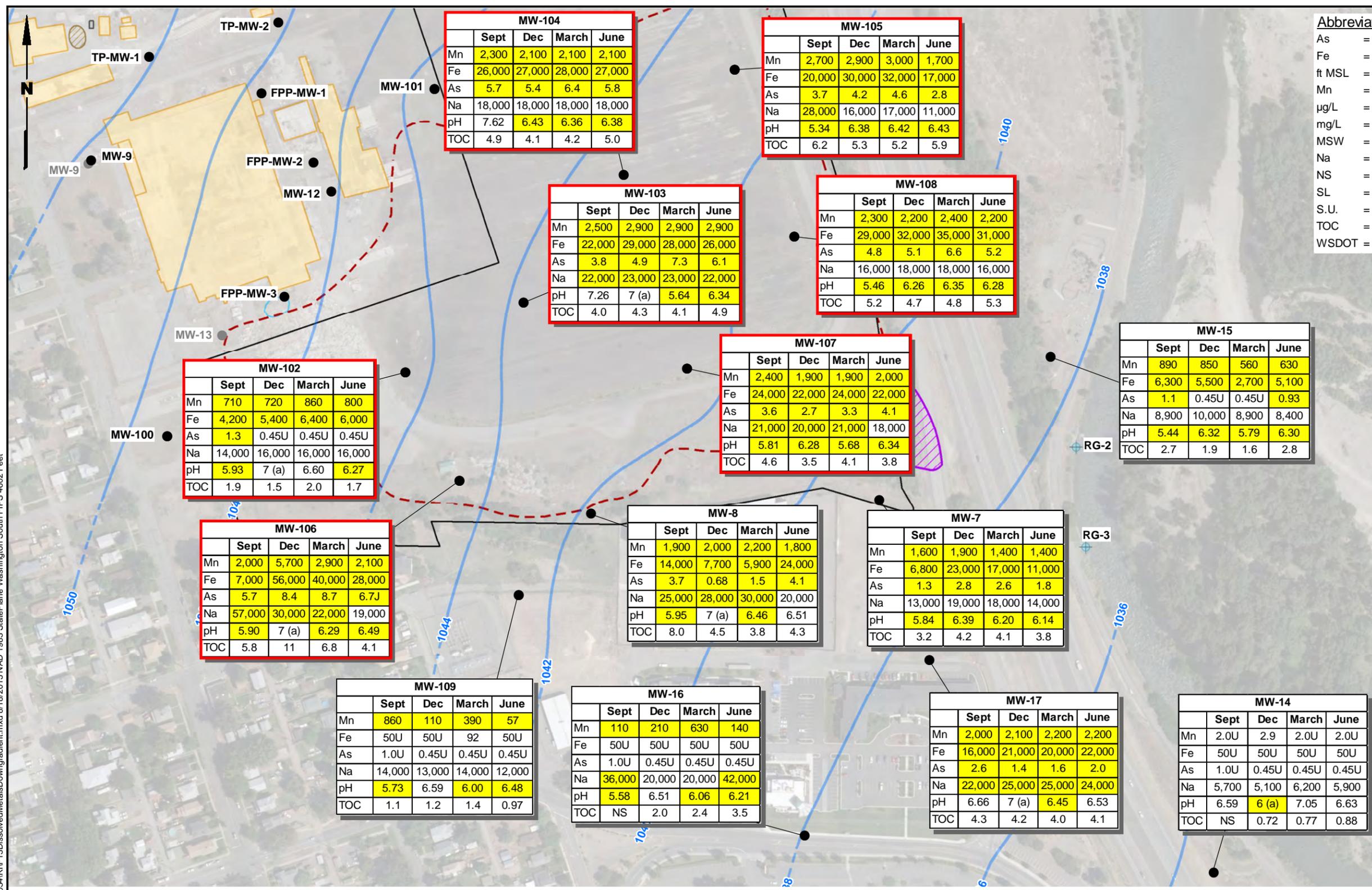
Closed City of Yakima Landfill Site Yakima, Washington	Selected Dissolved Metals and Conventional Concentrations, Upgradient Locations (September 2014 to June 2015)	Figure 12
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G:\Projects\1148\008\030\034\RV\F\3DissolvedMetalsDowngradient.mxd 8/18/2015 NAD 1983 StatePlane Washington South FIPS 4602 Feet

Abbreviations and Acronyms

- As = arsenic
- Fe = iron
- ft MSL = feet mean sea level
- Mn = manganese
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- MSW = municipal solid waste
- Na = sodium
- NS = not sampled
- SL = screening level
- S.U. = standard units
- TOC = total organic carbon
- WSDOT = Washington State Department of Transportation



MW-102

	Sept	Dec	March	June
Mn	710	720	860	800
Fe	4,200	5,400	6,400	6,000
As	1.3	0.45U	0.45U	0.45U
Na	14,000	16,000	16,000	16,000
pH	5.93	7 (a)	6.60	6.27
TOC	1.9	1.5	2.0	1.7

MW-104

	Sept	Dec	March	June
Mn	2,300	2,100	2,100	2,100
Fe	26,000	27,000	28,000	27,000
As	5.7	5.4	6.4	5.8
Na	18,000	18,000	18,000	18,000
pH	7.62	6.43	6.36	6.38
TOC	4.9	4.1	4.2	5.0

MW-105

	Sept	Dec	March	June
Mn	2,700	2,900	3,000	1,700
Fe	20,000	30,000	32,000	17,000
As	3.7	4.2	4.6	2.8
Na	28,000	16,000	17,000	11,000
pH	5.34	6.38	6.42	6.43
TOC	6.2	5.3	5.2	5.9

MW-103

	Sept	Dec	March	June
Mn	2,500	2,900	2,900	2,900
Fe	22,000	29,000	28,000	26,000
As	3.8	4.9	7.3	6.1
Na	22,000	23,000	23,000	22,000
pH	7.26	7 (a)	5.64	6.34
TOC	4.0	4.3	4.1	4.9

MW-108

	Sept	Dec	March	June
Mn	2,300	2,200	2,400	2,200
Fe	29,000	32,000	35,000	31,000
As	4.8	5.1	6.6	5.2
Na	16,000	18,000	18,000	16,000
pH	5.46	6.26	6.35	6.28
TOC	5.2	4.7	4.8	5.3

MW-107

	Sept	Dec	March	June
Mn	2,400	1,900	1,900	2,000
Fe	24,000	22,000	24,000	22,000
As	3.6	2.7	3.3	4.1
Na	21,000	20,000	21,000	18,000
pH	5.81	6.28	5.68	6.34
TOC	4.6	3.5	4.1	3.8

MW-15

	Sept	Dec	March	June
Mn	890	850	560	630
Fe	6,300	5,500	2,700	5,100
As	1.1	0.45U	0.45U	0.93
Na	8,900	10,000	8,900	8,400
pH	5.44	6.32	5.79	6.30
TOC	2.7	1.9	1.6	2.8

MW-106

	Sept	Dec	March	June
Mn	2,000	5,700	2,900	2,100
Fe	7,000	56,000	40,000	28,000
As	5.7	8.4	8.7	6.7J
Na	57,000	30,000	22,000	19,000
pH	5.90	7 (a)	6.29	6.49
TOC	5.8	11	6.8	4.1

MW-8

	Sept	Dec	March	June
Mn	1,900	2,000	2,200	1,800
Fe	14,000	7,700	5,900	24,000
As	3.7	0.68	1.5	4.1
Na	25,000	28,000	30,000	20,000
pH	5.95	7 (a)	6.46	6.51
TOC	8.0	4.5	3.8	4.3

MW-7

	Sept	Dec	March	June
Mn	1,600	1,900	1,400	1,400
Fe	6,800	23,000	17,000	11,000
As	1.3	2.8	2.6	1.8
Na	13,000	19,000	18,000	14,000
pH	5.84	6.39	6.20	6.14
TOC	3.2	4.2	4.1	3.8

MW-109

	Sept	Dec	March	June
Mn	860	110	390	57
Fe	50U	50U	92	50U
As	1.0U	0.45U	0.45U	0.45U
Na	14,000	13,000	14,000	12,000
pH	5.73	6.59	6.00	6.48
TOC	1.1	1.2	1.4	0.97

MW-16

	Sept	Dec	March	June
Mn	110	210	630	140
Fe	50U	50U	50U	50U
As	1.0U	0.45U	0.45U	0.45U
Na	36,000	20,000	20,000	42,000
pH	5.58	6.51	6.06	6.21
TOC	NS	2.0	2.4	3.5

MW-17

	Sept	Dec	March	June
Mn	2,000	2,100	2,200	2,200
Fe	16,000	21,000	20,000	22,000
As	2.6	1.4	1.6	2.0
Na	22,000	25,000	25,000	24,000
pH	6.66	7 (a)	6.45	6.53
TOC	4.3	4.2	4.0	4.1

MW-14

	Sept	Dec	March	June
Mn	2.0U	2.9	2.0U	2.0U
Fe	50U	50U	50U	50U
As	1.0U	0.45U	0.45U	0.45U
Na	5,700	5,100	6,200	5,900
pH	6.59	6 (a)	7.05	6.63
TOC	NS	0.72	0.77	0.88

Legend

- Monitoring Well
- Monitoring Well (Decommissioned or Destroyed)
- ⊕ River Gauge
- Groundwater Elevation and Contour (ft MSL)
- PLSA Surveyed Parcel Boundaries (October 2014)
- Extent of Municipal Solid Waste
- WSDOT Refuse Contour - (0 ft; inferred) - 1996
- ▨ 2,000 cubic yards of material removed by WSDOT during ramp construction
- ▨ Building
- ▨ Former Building
- ▨ Existing or Former Pond
- ▨ Septic Tank
- ▨ Other Features
- ▨ Red-Bordered Data Box Indicates Well Installed within Known Extent of MSW

Analyte	Units	SL
Mn	µg/L	50
Fe	µg/L	300
As	µg/L	0.45
Na	µg/L	20,000
pH	S.U.	<6.5 or >8.5
TOC	mg/L	--



Data Sources: Yakima County GIS; Esri World Imagery; SLR; URS; Parametrix 2008; Boise 1985.

Closed City of Yakima
Landfill Site
Yakima, Washington

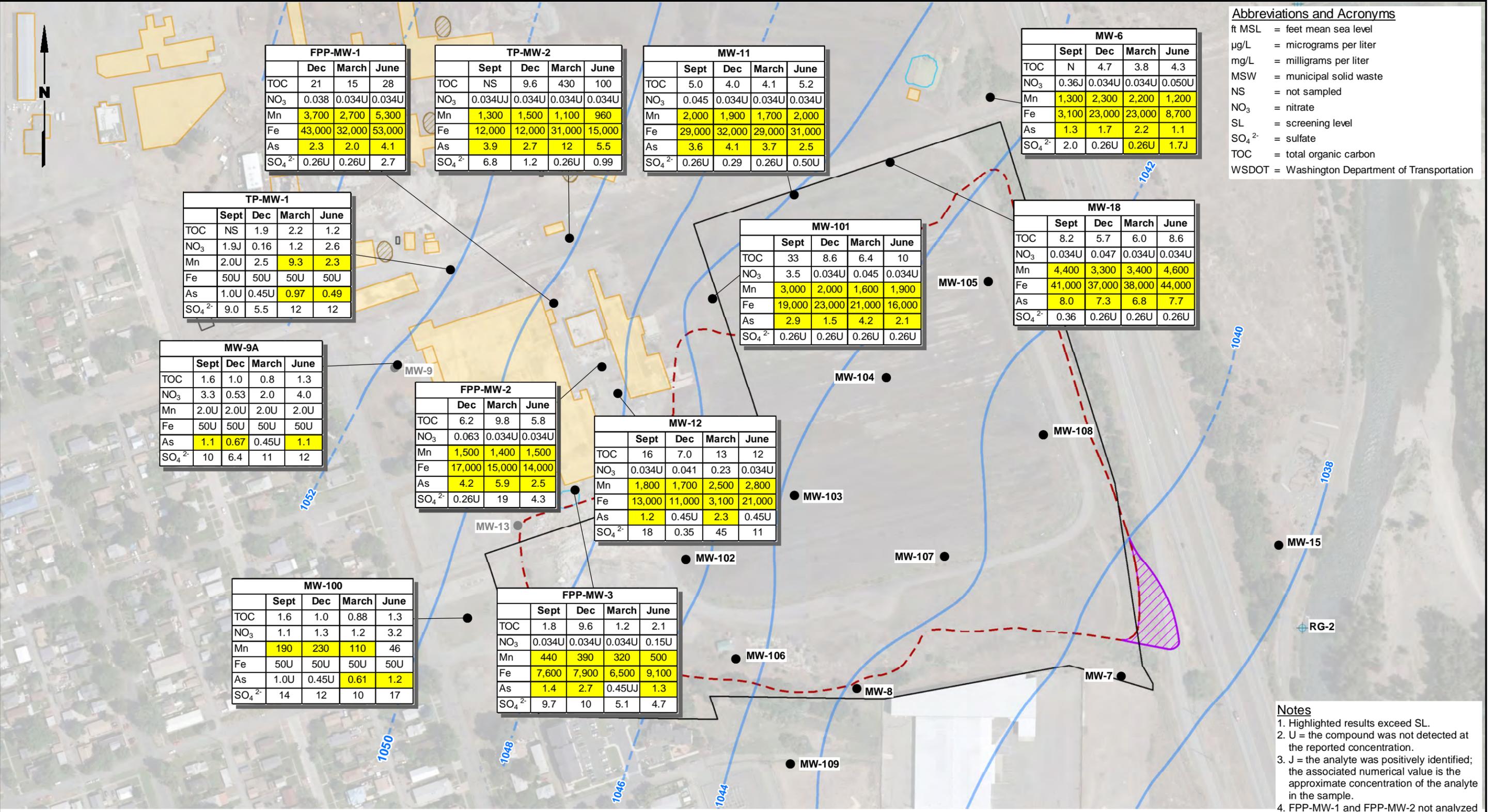
Selected Dissolved Metals and Conventional Concentrations Site and Downgradient Locations (September 2014 to June 2015)

- Notes**
1. Highlighted results exceed SL.
 2. U = the compound was not detected at the reported concentration.
 3. J = the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 4. (a) = pH strips used to measure pH value, due to field meter issues.
 5. FPP-MW-1 and FPP-MW-2 not analyzed in September 2014.
 6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



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Abbreviations and Acronyms
 ft MSL = feet mean sea level
 µg/L = micrograms per liter
 mg/L = milligrams per liter
 MSW = municipal solid waste
 NS = not sampled
 NO₃ = nitrate
 SL = screening level
 SO₄²⁻ = sulfate
 TOC = total organic carbon
 WSDOT = Washington Department of Transportation



FPP-MW-1			
	Dec	March	June
TOC	21	15	28
NO ₃	0.038	0.034U	0.034U
Mn	3,700	2,700	5,300
Fe	43,000	32,000	53,000
As	2.3	2.0	4.1
SO ₄ ²⁻	0.26U	0.26U	2.7

TP-MW-2				
	Sept	Dec	March	June
TOC	NS	9.6	430	100
NO ₃	0.034UJ	0.034U	0.034U	0.034U
Mn	1,300	1,500	1,100	960
Fe	12,000	12,000	31,000	15,000
As	3.9	2.7	12	5.5
SO ₄ ²⁻	6.8	1.2	0.26U	0.99

MW-11				
	Sept	Dec	March	June
TOC	5.0	4.0	4.1	5.2
NO ₃	0.045	0.034U	0.034U	0.034U
Mn	2,000	1,900	1,700	2,000
Fe	29,000	32,000	29,000	31,000
As	3.6	4.1	3.7	2.5
SO ₄ ²⁻	0.26U	0.29	0.26U	0.50U

MW-6				
	Sept	Dec	March	June
TOC	N	4.7	3.8	4.3
NO ₃	0.36J	0.034U	0.034U	0.050U
Mn	1,300	2,300	2,200	1,200
Fe	3,100	23,000	23,000	8,700
As	1.3	1.7	2.2	1.1
SO ₄ ²⁻	2.0	0.26U	0.26U	1.7J

TP-MW-1				
	Sept	Dec	March	June
TOC	NS	1.9	2.2	1.2
NO ₃	1.9J	0.16	1.2	2.6
Mn	2.0U	2.5	9.3	2.3
Fe	50U	50U	50U	50U
As	1.0U	0.45U	0.97	0.49
SO ₄ ²⁻	9.0	5.5	12	12

MW-101				
	Sept	Dec	March	June
TOC	33	8.6	6.4	10
NO ₃	3.5	0.034U	0.045	0.034U
Mn	3,000	2,000	1,600	1,900
Fe	19,000	23,000	21,000	16,000
As	2.9	1.5	4.2	2.1
SO ₄ ²⁻	0.26U	0.26U	0.26U	0.26U

MW-18				
	Sept	Dec	March	June
TOC	8.2	5.7	6.0	8.6
NO ₃	0.034U	0.047	0.034U	0.034U
Mn	4,400	3,300	3,400	4,600
Fe	41,000	37,000	38,000	44,000
As	8.0	7.3	6.8	7.7
SO ₄ ²⁻	0.36	0.26U	0.26U	0.26U

MW-9A				
	Sept	Dec	March	June
TOC	1.6	1.0	0.8	1.3
NO ₃	3.3	0.53	2.0	4.0
Mn	2.0U	2.0U	2.0U	2.0U
Fe	50U	50U	50U	50U
As	1.1	0.67	0.45U	1.1
SO ₄ ²⁻	10	6.4	11	12

FPP-MW-2			
	Dec	March	June
TOC	6.2	9.8	5.8
NO ₃	0.063	0.034U	0.034U
Mn	1,500	1,400	1,500
Fe	17,000	15,000	14,000
As	4.2	5.9	2.5
SO ₄ ²⁻	0.26U	19	4.3

MW-12				
	Sept	Dec	March	June
TOC	16	7.0	13	12
NO ₃	0.034U	0.041	0.23	0.034U
Mn	1,800	1,700	2,500	2,800
Fe	13,000	11,000	3,100	21,000
As	1.2	0.45U	2.3	0.45U
SO ₄ ²⁻	18	0.35	45	11

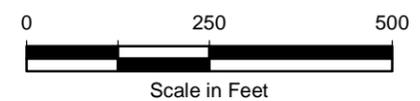
MW-100				
	Sept	Dec	March	June
TOC	1.6	1.0	0.88	1.3
NO ₃	1.1	1.3	1.2	3.2
Mn	190	230	110	46
Fe	50U	50U	50U	50U
As	1.0U	0.45U	0.61	1.2
SO ₄ ²⁻	14	12	10	17

FPP-MW-3				
	Sept	Dec	March	June
TOC	1.8	9.6	1.2	2.1
NO ₃	0.034U	0.034U	0.034U	0.15U
Mn	440	390	320	500
Fe	7,600	7,900	6,500	9,100
As	1.4	2.7	0.45UJ	1.3
SO ₄ ²⁻	9.7	10	5.1	4.7

Legend

- Monitoring Well
- Monitoring Well (Decommissioned or Destroyed)
- ⊕ River Gauge
- Groundwater Elevation and Contour (ft MSL)
- PLSA Surveyed Parcel Boundaries (October 2014)
- - - Extent of Municipal Solid Waste
- WSDOT Refuse Contour - (0 ft; inferred) - 1996
- ▨ 2,000 cubic yards of material removed by WSDOT during ramp construction
- ▭ Building
- ▭ Former Building
- ▭ Existing or Former Pond
- ▭ Septic Tank
- ▭ Other Features
- ▭ Red-Bordered Data Box Indicates Well Installed within Known Extent of MSW

Analyte	Units	SL
TOC	µg/L	--
NO ₃	mg/L	10
Mn	µg/L	50
Fe	µg/L	300
As	µg/L	0.45
SO ₄ ²⁻	mg/L	--



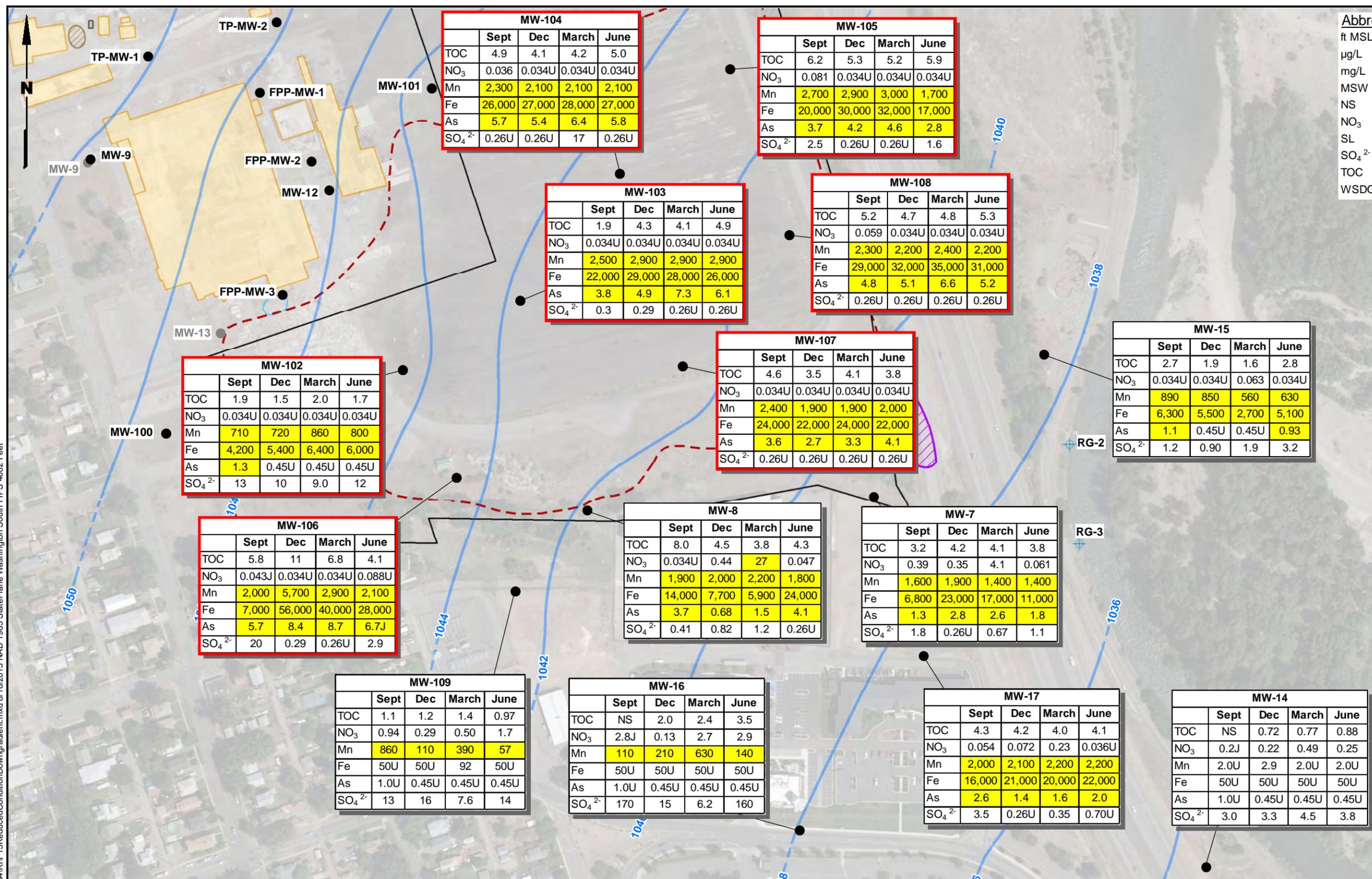
Data Sources: Yakima County GIS; Esri World Imagery; SLR; URS; Parametrix 2008; Boise 1985.

- Notes**
1. Highlighted results exceed SL.
 2. U = the compound was not detected at the reported concentration.
 3. J = the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 4. FPP-MW-1 and FPP-MW-2 not analyzed in September 2014.
 5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Closed City of Yakima Landfill Site Yakima, Washington	Reduced-Condition Indicator Analyte Results, Upgradient Locations (September 2014 to June 2015)	Figure 14
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G:\Projects\1148\008\034\RV\F\FReducedConditionDowngradient.mxd 8/18/2015 NAD 1983 StatePlane Washington South FIPS 4602 Feet

Abbreviations and Acronyms
 ft MSL = feet mean sea level
 µg/L = micrograms per liter
 mg/L = milligrams per liter
 MSW = municipal solid waste
 NS = not sampled
 NO₃ = nitrate
 SL = screening level
 SO₄²⁻ = sulfate
 TOC = total organic carbon
 WSDOT = Washington Department of Transportation



MW-102				
	Sept	Dec	March	June
TOC	1.9	1.5	2.0	1.7
NO ₃	0.034U	0.034U	0.034U	0.034U
Mn	710	720	860	800
Fe	4,200	5,400	6,400	6,000
As	1.3	0.45U	0.45U	0.45U
SO ₄ ²⁻	13	10	9.0	12

MW-104				
	Sept	Dec	March	June
TOC	4.9	4.1	4.2	5.0
NO ₃	0.036	0.034U	0.034U	0.034U
Mn	2,300	2,100	2,100	2,100
Fe	26,000	27,000	28,000	27,000
As	5.7	5.4	6.4	5.8
SO ₄ ²⁻	0.26U	0.26U	17	0.26U

MW-105				
	Sept	Dec	March	June
TOC	6.2	5.3	5.2	5.9
NO ₃	0.081	0.034U	0.034U	0.034U
Mn	2,700	2,900	3,000	1,700
Fe	20,000	30,000	32,000	17,000
As	3.7	4.2	4.6	2.8
SO ₄ ²⁻	2.5	0.26U	0.26U	1.6

MW-103				
	Sept	Dec	March	June
TOC	1.9	4.3	4.1	4.9
NO ₃	0.034U	0.034U	0.034U	0.034U
Mn	2,500	2,900	2,900	2,900
Fe	22,000	29,000	28,000	26,000
As	3.8	4.9	7.3	6.1
SO ₄ ²⁻	0.3	0.29	0.26U	0.26U

MW-108				
	Sept	Dec	March	June
TOC	5.2	4.7	4.8	5.3
NO ₃	0.059	0.034U	0.034U	0.034U
Mn	2,300	2,200	2,400	2,200
Fe	29,000	32,000	35,000	31,000
As	4.8	5.1	6.6	5.2
SO ₄ ²⁻	0.26U	0.26U	0.26U	0.26U

MW-107				
	Sept	Dec	March	June
TOC	4.6	3.5	4.1	3.8
NO ₃	0.034U	0.034U	0.034U	0.034U
Mn	2,400	1,900	1,900	2,000
Fe	24,000	22,000	24,000	22,000
As	3.6	2.7	3.3	4.1
SO ₄ ²⁻	0.26U	0.26U	0.26U	0.26U

MW-15				
	Sept	Dec	March	June
TOC	2.7	1.9	1.6	2.8
NO ₃	0.034U	0.034U	0.063	0.034U
Mn	890	850	560	630
Fe	6,300	5,500	2,700	5,100
As	1.1	0.45U	0.45U	0.93
SO ₄ ²⁻	1.2	0.90	1.9	3.2

MW-106				
	Sept	Dec	March	June
TOC	5.8	11	6.8	4.1
NO ₃	0.043J	0.034U	0.034U	0.088U
Mn	2,000	5,700	2,900	2,100
Fe	7,000	56,000	40,000	28,000
As	5.7	8.4	8.7	6.7J
SO ₄ ²⁻	20	0.29	0.26U	2.9

MW-8				
	Sept	Dec	March	June
TOC	8.0	4.5	3.8	4.3
NO ₃	0.034U	0.44	27	0.047
Mn	1,900	2,000	2,200	1,800
Fe	14,000	7,700	5,900	24,000
As	3.7	0.68	1.5	4.1
SO ₄ ²⁻	0.41	0.82	1.2	0.26U

MW-7				
	Sept	Dec	March	June
TOC	3.2	4.2	4.1	3.8
NO ₃	0.39	0.35	4.1	0.061
Mn	1,600	1,900	1,400	1,400
Fe	6,800	23,000	17,000	11,000
As	1.3	2.8	2.6	1.8
SO ₄ ²⁻	1.8	0.26U	0.67	1.1

MW-109				
	Sept	Dec	March	June
TOC	1.1	1.2	1.4	0.97
NO ₃	0.94	0.29	0.50	1.7
Mn	860	110	390	57
Fe	50U	50U	92	50U
As	1.0U	0.45U	0.45U	0.45U
SO ₄ ²⁻	13	16	7.6	14

MW-16				
	Sept	Dec	March	June
TOC	NS	2.0	2.4	3.5
NO ₃	2.8J	0.13	2.7	2.9
Mn	110	210	630	140
Fe	50U	50U	50U	50U
As	1.0U	0.45U	0.45U	0.45U
SO ₄ ²⁻	170	15	6.2	160

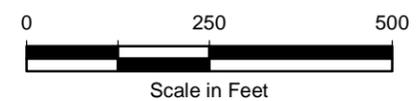
MW-17				
	Sept	Dec	March	June
TOC	4.3	4.2	4.0	4.1
NO ₃	0.054	0.072	0.23	0.036U
Mn	2,000	2,100	2,200	2,200
Fe	16,000	21,000	20,000	22,000
As	2.6	1.4	1.6	2.0
SO ₄ ²⁻	3.5	0.26U	0.35	0.70U

MW-14				
	Sept	Dec	March	June
TOC	NS	0.72	0.77	0.88
NO ₃	0.2J	0.22	0.49	0.25
Mn	2.0U	2.9	2.0U	2.0U
Fe	50U	50U	50U	50U
As	1.0U	0.45U	0.45U	0.45U
SO ₄ ²⁻	3.0	3.3	4.5	3.8

Legend

- Monitoring Well
- Monitoring Well (Decommissioned or Destroyed)
- ⊕ River Gauge
- Groundwater Elevation and Contour (ft MSL)
- PLSA Surveyed Parcel Boundaries (October 2014)
- Extent of Municipal Solid Waste
- WSDOT Refuse Contour - (0 ft; inferred) - 1996
- 2,000 cubic yards of material removed by WSDOT during ramp construction
- Existing or Former Pond
- Septic Tank
- Other Features
- Red-Bordered Data Box Indicates Well Installed within Known Extent of MSW
- Building
- Former Building

Analyte	Units	SL
TOC	µg/L	--
NO ₃	mg/L	10
Mn	µg/L	50
Fe	µg/L	300
As	µg/L	0.45
SO ₄ ²⁻	mg/L	--



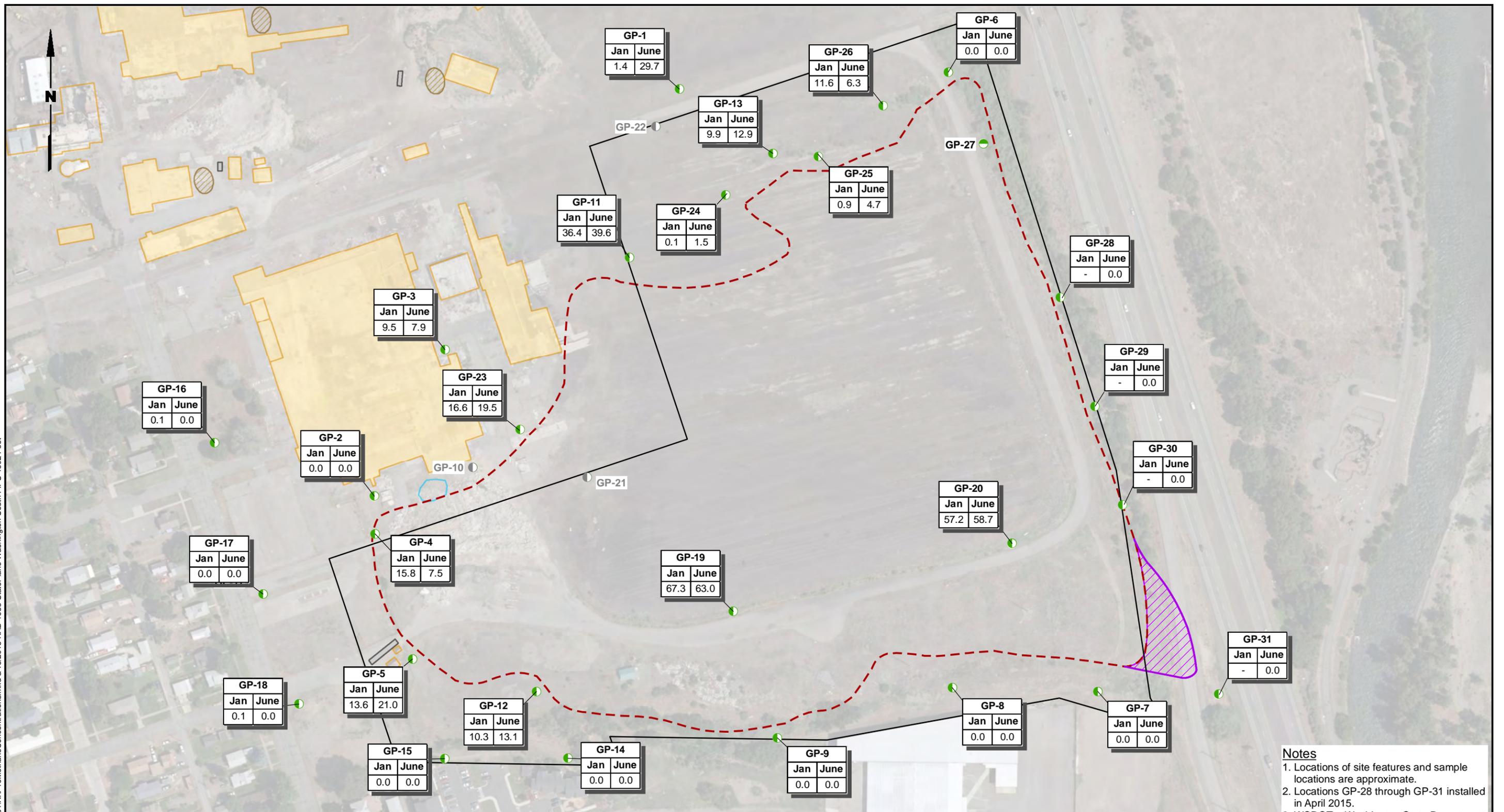
Data Sources: Yakima County GIS; Esri World Imagery; SLR; URS; Parametrix 2008; Boise 1985.

- Notes**
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 4. FPP-MW-1 and FPP-MW-2 not analyzed in September 2014.
 5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Closed City of Yakima Landfill Site Yakima, Washington	Reduced-Condition Indicator Analyte Results, Site and Downgradient Locations (September 2014 to June 2015)	Figure 15
--------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------



G:\Projects\1148\008\03\0034\RV\F\6\MethaneConcentrations.mxd 8/18/2015 NAD 1983 StatePlane Washington South FIPS 4602 Feet



Legend

- Soil Sample Only - No Gas Probe Installed
- Gas Probe
- Gas Probe (Destroyed)
- PLSA Surveyed Parcel Boundaries (October 2014)
- Extent of Municipal Solid Waste
- WSDOT Refuse Contour - (0 ft; inferred) - 1996
- ▨ 2,000 cubic yards of material removed by WSDOT during ramp construction
- ▭ Building
- ▭ Former Building
- ▭ Existing or Former Pond
- ▨ Septic Tank
- ▭ Other Features

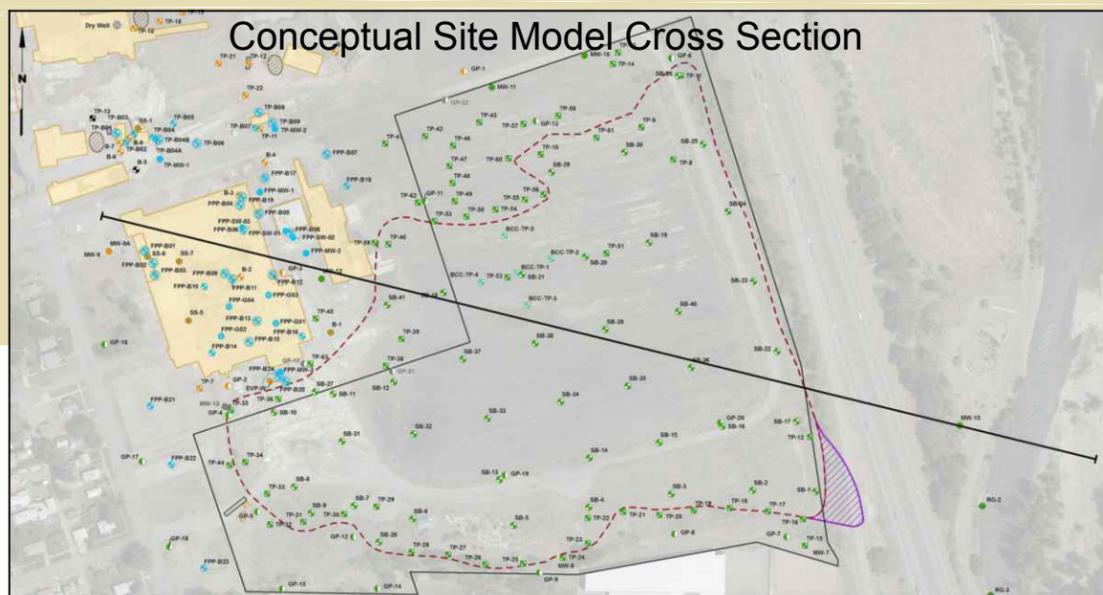
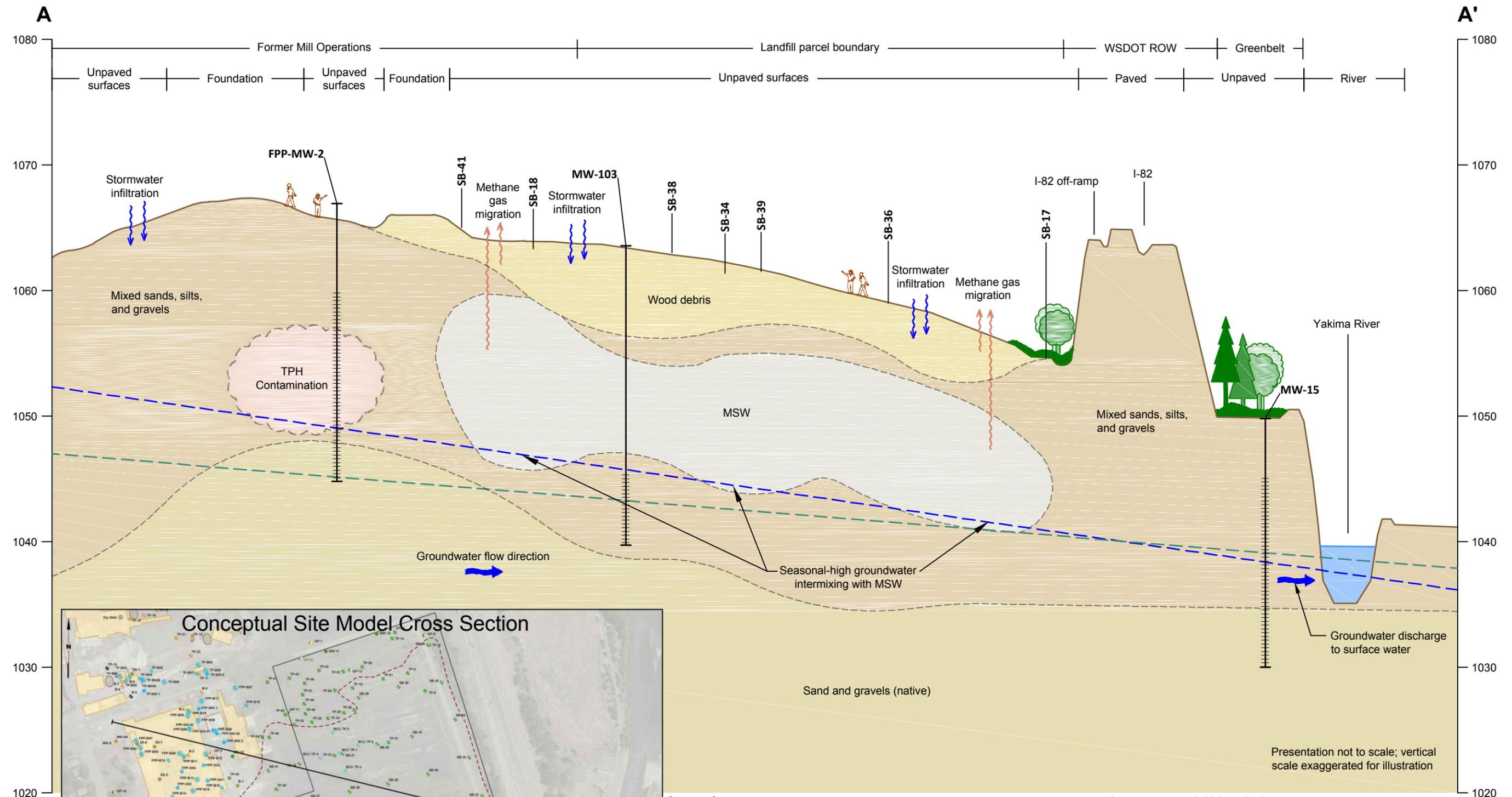


Data Sources: Yakima County GIS; Esri World Imagery; SLR; URS; Parametrix 2008; Boise 1985.

- Notes**
1. Locations of site features and sample locations are approximate.
 2. Locations GP-28 through GP-31 installed in April 2015.
 3. WSDOT = Washington State Department of Transportation.
 4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



LANDAU ASSOCIATES, INC. | G:\Projects\1148\008\030\034\ConceptualSiteModel\alignment-profile2.dwg (A) Figure 17 9/9/2015

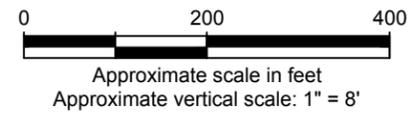


Legend

- Groundwater well and screen interval
- Approximate Groundwater Surface, Seasonal High (September 2014)
- Approximate Groundwater Surface, Seasonal Low (March 2015)

Acronyms and Abbreviations

- | | |
|-----------------------------|-------------------------------------------------------|
| FPP = former Plywood Plant | TP = test pit |
| MSW = municipal solid waste | TPH = total petroleum hydrocarbons |
| MW = monitoring well | WSDOT = Washington State Department of Transportation |
| ROW = right-of-way | |
| SB = soil boring | |



Source: Yakima County GIS; SLR; URS; Parametrix 2008; Boise 1985.

Closed City of Yakima
Landfill Site
Yakima, Washington

Conceptual Site Model

Figure
17

**TABLE 1
SOIL ANALYTICAL PROGRAM
CLOSED CITY OF YAKIMA LANDFILL SITE**

Analytical Test	Method	Notes	Soil Boring (September 2014) (a)																		Soil Boring (October 2014)				Soil Boring (April 2015)							
			U	U	MSW		MSW	MSW		MSW	MSW		MSW	MSW		D	U	U	U	U	D	D	D	D	D							
			SB-100	SB-101	SB-102	SB-103	SB-104	SB-105	SB-106	SB-107	SB-108	SB-109	GP-23	GP-24	GP-25	GP-26	GP-27	GP-28	GP-29	GP-30	GP-31											
Actual Sample Depth (ft BGS)			13.5-14	17.5-18.5	4-5	15-15.5	20.5-21.5	2.5-3	19-20	2.5-3.5	17.5-19	2.5-3.5	13.5-14.5	2.5-3.5	16-17	2.5-3.5	21.5-22.5	5-5.5	12.5-13	15.0-15.5	12.5-13.0	NA	7.5-8.5	5.5-6.5	6.5-7.5	8.0-9.0	8.0-8.5	6.5-7.5				
Metals	EPA 6020	As, Ba, Cd, Cr, Pb, Fe, Mn, Se, Ag, Na	No shallow sample collected (insufficient soil volume recovered)	X	No shallow sample collected (predominately wood debris)	X	X	X	No shallow sample collected (insufficient soil volume above MSW)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Mercury	EPA 7471			X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hexavalent Chromium	EPA 7196			X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chlorinated Pesticides	EPA 8081 (LL)			X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PCBs	EPA 8082 (LL)			X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VOCs	EPA 8260			X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SVOCs	EPA 8270			X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PAHs	EPA 8720-SIM			X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TPH-HCID	NWTPH-HCID			X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TPH-Dx	NWTPH-Dx w/SGC						X						X			X			X													
TPH-Dx	NWTPH-Dx w/o SGC						X						X			X			X													
TPH-G	NWTPH-G												X																			
Conventionals	EPA 300.0M	Fluoride, Nitrate, and Nitrite		X		X (b)	X	X		X (b)	X (b)	X (b)	X (b)	X (b)	X	X	X	X	X (b)	X (b)	X	X	X	X	X	X	X	X	X	X	X	X
pH	EPA 9045		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			

EPA = US Environmental Protection Agency
 ft BGS = feet below ground surface
 GP = gas probe
 HCID = Hydrocarbon Identification
 LL = lower limit
 PAHs = Polycyclic Aromatic Hydrocarbons
 PCBs = Polychlorinated Biphenyls

SGC = silica gel cleanup
 SVOCs = Semivolatile Organic Compounds
 TPH = Total Petroleum Hydrocarbons
 TPH-Dx = Diesel-range extended petroleum hydrocarbons
 TPH-G = Gasoline-range petroleum hydrocarbons
 VOCs = Volatile Organic Compounds

Ag = Silver
 As = Arsenic
 Ba = Barium
 Cd = Cadmium
 Cr = Chromium

Fe = Iron
 Mn = Manganese
 Na = Sodium
 Pb = Lead
 Se = Selenium

U = upgradient boring
 D = downgradient boring
 MSW = Municipal Solid Waste boring

(a) Soil borings SB-100 through SB-109 were completed as groundwater monitoring wells MW-100 through MW-109, respectively.
 (b) Analyses completed outside the method-recommended hold time.

TABLE 2A
GROUNDWATER ELEVATION AND SURVEY DATA - SEPTEMBER 2014
CLOSED CITY OF YAKIMA LANDFILL SITE

Monitoring Well Identification	Northing	Easting	Elevation					Notes
			Top of Casing Lid	Top of PVC	Ground Surface	Depth to Water	Groundwater	
MW-1	469401.5462	1639637.5680	1070.66		1067.11	--	--	Well locked. Could not access.
MW-3	--	--	--	--	--	--	--	Well not found.
MW-4	--	--	--	--	--	--	--	Well not found.
MW-5	468565.1717	1641759.8447	1059.14	1057.66	1056.04	8.43	1049.23	
MW-6	467396.8652	1642277.6850	1060.29	1059.62	1057.09	14.37	1045.25	
MW-7	465865.5855	1642624.4579	1049.79	1049.13	1046.19	9.07	1040.06	
MW-8	465832.9292	1641923.6098	1052.27	1051.72	1048.87	7.80	1043.92	
MW-9	466681.1104	1640700.6626	1067.97	1067.51	1065.22	--	--	Well decommissioned
MW-9A	466689.2948	1640707.7116	1065.08	1064.41	1065.02	10.62	1053.79	
MW-10	468578.2813	1640311.1814	1071.23	1070.17	1068.53	11.38	1058.79	
MW-11	467137.9887	1641758.2096	1066.37	1065.95	1063.32	19.58	1046.37	
MW-12	466613.9506	1641291.2846	1068.91	1068.65	1065.89	19.29	1049.36	
MW-14	464961.4013	1643438.2272	1041.77	1041.31	1041.57	7.66	1033.65	
MW-15	466213.1371	1643041.3941	1050.68	1050.46	1049.68	11.89	1038.57	
MW-16	465050.5963	1642442.4933	1047.18	1046.86	1047.18	6.92	1039.94	
MW-17	465477.0519	1642746.0725	1044.52	1044.32	1044.52	5.46	1038.86	
MW-18	467224.4867	1642012.2967	1064.45	1063.78	1061.10	17.74	1046.04	
TP-MW-1	466941.0338	1640847.8987	1069.05	1068.70	1066.07	14.9	1053.80	
TP-MW-2	467023.8198	1641162.8497	1067.10	1066.54	1063.84	16.09	1050.45	
FPP-MW-1	466851.1582	1641121.3267	1069.55	1069.03	1066.40	18.93	1050.10	
FPP-MW-2	466684.0694	1641248.3903	1069.53	1068.77	1066.20	19.41	1049.36	
FPP-MW-3	466359.2722	1641177.5411	1066.79	1066.29	1063.21	15.91	1050.38	
MW-100	466019.6516	1640892.8071	1066.46	1065.72	1064.91	13.92	1051.80	
MW-101	466863.2039	1641542.3080	1067.02	1066.75	1064.32	20.92	1045.83	
MW-102	466174.3934	1641471.5126	1064.86	1064.37	1062.21	16.08	1048.29	
MW-103	466344.2824	1641759.2190	1065.60	1065.11	1063.35	19.99	1045.12	
MW-104	466654.7950	1642002.6422	1061.66	1061.51	1059.66	16.94	1044.57	
MW-105	466908.7123	1642272.3829	1060.41	1059.60	1058.24	16.14	1043.46	
MW-106	465912.5112	1641603.6856	1060.26	1059.86	1058.36	13.17	1046.69	
MW-107	466183.4339	1642156.8883	1061.68	1061.38	1059.93	17.58	1043.80	
MW-108	466503.9634	1642418.1085	1059.99	1059.58	1057.99	18.21	1041.37	
MW-109	465633.4457	1641747.8304	1062.15	1061.50	1059.30	15.97	1045.53	

TABLE 2A
GROUNDWATER ELEVATION AND SURVEY DATA - SEPTEMBER 2014
CLOSED CITY OF YAKIMA LANDFILL SITE

Monitoring Well Identification	Northing	Easting	Elevation					Notes
			Top of Casing Lid	Top of PVC	Ground Surface	Depth to Water	Groundwater	
RG-3	465743.6805	1643122.5822	1042.73	--	--	--	--	Marked at top of headwall
RG-3	465749.3794	1643126.3722	1037.28	--	--	1.62	1035.66	Marked at bottom of concrete
RG-2	465995.5427	1643101.8587	1041.86	--	--	--	--	Marked at top of concrete
RG-2	465992.8070	1643103.3163	1039.27	--	--	3.33	1035.94	Marked on top of rock
RG-1	467634.1637	1643083.6968	1053.44	--	--	--	--	Marked at top of rock
RG-1	467641.7786	1643091.1464	1047.79	--	--	5.76	1042.03	Marked at top of rock
RG-4	464472.3786	1644060.9160	1037.27	--	--	--	--	Marked at top of rock
RG-4	464474.3282	1644064.8369	1033.79	--	--	2.08	1031.71	Marked at top of hinge

Northings and Eastings are U.S. State Plane 1983, NAD 1983, GEOID 12A, Zone Washington South (4609) and are provided in U.S. survey feet.

Elevations are NAVD88 datum and provided in U.S. survey feet.

MW = Monitoring well

RG = River gauge

TABLE 2B
GROUNDWATER ELEVATION AND SURVEY DATA - DECEMBER 2014
CLOSED CITY OF YAKIMA LANDFILL SITE

Monitoring Well Identification	Northing	Easting	Elevation					Notes
			Top of Casing Lid	Top of PVC	Ground Surface	Depth to Water	Groundwater	
MW-1	469401.5462	1639637.5680	1070.66	1070.36	1067.11	5.23	1065.13	
MW-3	--	--	--	--	--		--	Well not found; presumed destroyed.
MW-4	--	--	--	--	--		--	Well not found; presumed destroyed.
MW-5	468565.1717	1641759.8447	1059.14	1057.66	1056.04	8.16	1049.50	
MW-6	467396.8652	1642277.6850	1060.29	1059.62	1057.09	14.77	1044.85	
MW-7	465865.5855	1642624.4579	1049.79	1049.13	1046.19	10.00	1039.13	
MW-8	465832.9292	1641923.6098	1052.27	1051.72	1048.87	10.02	1041.70	
MW-9	466681.1104	1640700.6626	1067.97	1067.51	1065.22		--	Well decommissioned
MW-9A	466689.2948	1640707.7116	1065.08	1064.41	1065.02	12.73	1051.68	
MW-10	468578.2813	1640311.1814	1071.23	1070.17	1068.53	11.37	1058.80	
MW-11	467137.9887	1641758.2096	1066.37	1065.95	1063.32	20.02	1045.93	
MW-12	466613.9506	1641291.2846	1068.91	1068.65	1065.89	20.45	1048.20	
MW-14	464961.4013	1643438.2272	1041.77	1041.31	1041.57	7.91	1033.40	
MW-15	466213.1371	1643041.3941	1050.68	1050.46	1049.68	11.62	1038.84	
MW-16	465050.5963	1642442.4933	1047.18	1046.86	1047.18	8.91	1037.95	
MW-17	465477.0519	1642746.0725	1044.52	1044.32	1044.52	6.80	1037.52	
MW-18	467224.4867	1642012.2967	1064.45	1063.78	1061.10	18.20	1045.58	
TP-MW-1	466941.0338	1640847.8987	1069.05	1068.70	1066.07	16.56	1052.14	
TP-MW-2	467023.8198	1641162.8497	1067.10	1066.54	1063.84	16.02	1050.52	
FPP-MW-1	466851.1582	1641121.3267	1069.55	1069.03	1066.40	19.49	1049.54	
FPP-MW-2	466684.0694	1641248.3903	1069.53	1068.77	1066.20	20.45	1048.32	
FPP-MW-3	466359.2722	1641177.5411	1066.79	1066.29	1063.21	17.76	1048.53	
MW-100	466019.6516	1640892.8071	1066.46	1065.72	1064.91	16.25	1049.47	
MW-101	466863.2039	1641542.3080	1067.02	1066.75	1064.32	21.67	1045.08	
MW-102	466174.3934	1641471.5126	1064.86	1064.37	1062.21	17.63	1046.74	
MW-103	466344.2824	1641759.2190	1065.60	1065.11	1063.35	21.25	1043.86	
MW-104	466654.7950	1642002.6422	1061.66	1061.51	1059.66	17.88	1043.63	
MW-105	466908.7123	1642272.3829	1060.41	1059.60	1058.24	16.82	1042.78	
MW-106	465912.5112	1641603.6856	1060.26	1059.86	1058.36	15.27	1044.59	
MW-107	466183.4339	1642156.8883	1061.68	1061.38	1059.93	18.53	1042.85	
MW-108	466503.9634	1642418.1085	1059.99	1059.58	1057.99	18.76	1040.82	
MW-109	465633.4457	1641747.8304	1062.15	1061.50	1059.30	18.98	1042.52	

TABLE 2B
GROUNDWATER ELEVATION AND SURVEY DATA - DECEMBER 2014
CLOSED CITY OF YAKIMA LANDFILL SITE

Monitoring Well Identification	Northing	Easting	Elevation					Notes
			Top of Casing Lid	Top of PVC	Ground Surface	Depth to Water	Groundwater	
RG-3	465743.6805	1643122.5822	1042.73	--	--		--	Marked at top of headwall
RG-3	465749.3794	1643126.3722	1037.28	--	--	1.10	1036.18	Marked at bottom of concrete
RG-2	465995.5427	1643101.8587	1041.86	--	--		--	Marked at top of concrete
RG-2	465992.8070	1643103.3163	1039.27	--	--	2.75	1036.52	Marked on top of rock
RG-1	467634.1637	1643083.6968	1053.44	--	--		--	Marked at top of rock
RG-1	467641.7786	1643091.1464	1047.79	--	--	5.75	1042.04	Marked at top of rock
RG-4	464472.3786	1644060.9160	1037.27	--	--		--	Marked at top of rock
RG-4	464474.3282	1644064.8369	1033.79	--	--	1.70	1032.09	Marked at top of hinge

Northings and Eastings are U.S. State Plane 1983, NAD 1983, GEOID 12A, Zone Washington South (4609) and are provided in U.S. survey feet.

Elevations are NAVD88 datum and provided in U.S. survey feet.

MW = Monitoring well

RG = River gauge

**TABLE 2C
GROUNDWATER ELEVATION AND SURVEY DATA - MARCH 2015
CLOSED CITY OF YAKIMA LANDFILL SITE**

Monitoring Well Identification	Northing	Easting	Elevation					Notes
			Top of Casing Lid	Top of PVC	Ground Surface	Depth to Water	Groundwater	
MW-1	469401.5462	1639637.5680	1070.66	1070.36	1067.11	5.44	1064.92	
MW-3	--	--	--	--	--		--	Well not found; presumed destroyed.
MW-4	--	--	--	--	--		--	Well not found; presumed destroyed.
MW-5	468565.1717	1641759.8447	1059.14	1057.66	1056.04	8.02	1049.64	
MW-6	467396.8652	1642277.6850	1060.29	1059.62	1057.09	14.74	1044.88	
MW-7	465865.5855	1642624.4579	1049.79	1049.13	1046.19	10.00	1039.13	
MW-8	465832.9292	1641923.6098	1052.27	1051.72	1048.87	10.91	1040.81	
MW-9	466681.1104	1640700.6626	1067.97	1067.51	1065.22	--	--	Well decommissioned
MW-9A	466689.2948	1640707.7116	1065.08	1064.41	1065.02	14.91	1049.50	
MW-10	468578.2813	1640311.1814	1071.23	1070.17	1068.53	11.35	1058.82	
MW-11	467137.9887	1641758.2096	1066.37	1065.95	1063.32	20.40	1045.55	
MW-12	466613.9506	1641291.2846	1068.91	1068.65	1065.89	21.57	1047.08	
MW-14	464961.4013	1643438.2272	1041.77	1041.31	1041.57	7.53	1033.78	
MW-15	466213.1371	1643041.3941	1050.68	1050.46	1049.68	11.02	1039.44	
MW-16	465050.5963	1642442.4933	1047.18	1046.86	1047.18	9.75	1037.11	
MW-17	465477.0519	1642746.0725	1044.52	1044.32	1044.52	7.00	1037.32	
MW-18	467224.4867	1642012.2967	1064.45	1063.78	1061.10	18.50	1045.28	
TP-MW-1	466941.0338	1640847.8987	1069.05	1068.70	1066.07	19.05	1049.65	
TP-MW-2	467023.8198	1641162.8497	1067.10	1066.54	1063.84	17.60	1048.94	
FPP-MW-1	466851.1582	1641121.3267	1069.55	1069.03	1066.40	21.06	1047.97	
FPP-MW-2	466684.0694	1641248.3903	1069.53	1068.77	1066.20	21.90	1046.87	
FPP-MW-3	466359.2722	1641177.5411	1066.79	1066.29	1063.21	19.43	1046.86	
MW-100	466019.6516	1640892.8071	1066.46	1065.72	1064.91	18.16	1047.56	
MW-101	466863.2039	1641542.3080	1067.02	1066.75	1064.32	22.29	1044.46	
MW-102	466174.3934	1641471.5126	1064.86	1064.37	1062.21	18.81	1045.56	
MW-103	466344.2824	1641759.2190	1065.60	1065.11	1063.35	22.12	1042.99	
MW-104	466654.7950	1642002.6422	1061.66	1061.51	1059.66	18.45	1043.06	
MW-105	466908.7123	1642272.3829	1060.41	1059.60	1058.24	16.90	1042.70	
MW-106	465912.5112	1641603.6856	1060.26	1059.86	1058.36	16.59	1043.27	
MW-107	466183.4339	1642156.8883	1061.68	1061.38	1059.93	19.03	1042.35	
MW-108	466503.9634	1642418.1085	1059.99	1059.58	1057.99	18.63	1040.95	
MW-109	465633.4457	1641747.8304	1062.15	1061.50	1059.30	20.28	1041.22	

TABLE 2C
GROUNDWATER ELEVATION AND SURVEY DATA - MARCH 2015
CLOSED CITY OF YAKIMA LANDFILL SITE

Monitoring Well Identification	Northing	Easting	Elevation					Notes
			Top of Casing Lid	Top of PVC	Ground Surface	Depth to Water	Groundwater	
RG-3	465743.6805	1643122.5822	1042.73	--	--		--	Marked at top of headwall
RG-3	465749.3794	1643126.3722	1037.28	--	--	0.85	1036.43	Marked at bottom of concrete
RG-2	465995.5427	1643101.8587	1041.86	--	--		--	Marked at top of concrete
RG-2	465992.8070	1643103.3163	1039.27	--	--	1.87	1037.40	Marked on top of rock
RG-1	467634.1637	1643083.6968	1053.44	--	--		--	Marked at top of rock
RG-1	467641.7786	1643091.1464	1047.79	--	--	5.30	1042.49	Marked at top of rock
RG-4	464472.3786	1644060.9160	1037.27	--	--		--	Marked at top of rock
RG-4	464474.3282	1644064.8369	1033.79	--	--	1.24	1032.55	Marked at top of hinge

Northings and Eastings are U.S. State Plane 1983, NAD 1983, GEOID 12A, Zone Washington South (4609) and are provided in U.S. survey feet.

Elevations are NAVD88 datum and provided in U.S. survey feet.

MW = Monitoring well

RG = River gauge

**TABLE 2D
GROUNDWATER ELEVATION AND SURVEY DATA - JUNE 2015
CLOSED CITY OF YAKIMA LANDFILL SITE**

Monitoring Well Identification	Northing	Easting	Elevation					Notes
			Top of Casing Lid	Top of PVC	Ground Surface	Depth to Water	Groundwater	
MW-1	469401.5462	1639637.5680	1070.66	1070.36	1067.11	6.10	1064.26	
MW-3	--	--	--	--	--		--	Well not found; presumed destroyed.
MW-4	--	--	--	--	--		--	Well not found; presumed destroyed.
MW-5	468565.1717	1641759.8447	1059.14	1057.66	1056.04	8.89	1048.77	
MW-6	467396.8652	1642277.6850	1060.29	1059.62	1057.09	14.94	1044.68	
MW-7	465865.5855	1642624.4579	1049.79	1049.13	1046.19	9.46	1039.67	
MW-8	465832.9292	1641923.6098	1052.27	1051.72	1048.87	8.37	1043.35	
MW-9	466681.1104	1640700.6626	1067.97	1067.51	1065.22	--	--	Well decommissioned
MW-9A	466689.2948	1640707.7116	1065.08	1064.41	1065.02	10.58	1053.83	
MW-10	468578.2813	1640311.1814	1071.23	1070.17	1068.53	11.63	1058.54	
MW-11	467137.9887	1641758.2096	1066.37	1065.95	1063.32	19.87	1046.08	
MW-12	466613.9506	1641291.2846	1068.91	1068.65	1065.89	19.43	1049.22	
MW-14	464961.4013	1643438.2272	1041.77	1041.31	1041.57	8.44	1032.87	
MW-15	466213.1371	1643041.3941	1050.68	1050.46	1049.68	12.73	1037.73	
MW-16	465050.5963	1642442.4933	1047.18	1046.86	1047.18	7.17	1039.69	
MW-17	465477.0519	1642746.0725	1044.52	1044.32	1044.52	6.04	1038.28	
MW-18	467224.4867	1642012.2967	1064.45	1063.78	1061.10	18.06	1045.72	
TP-MW-1	466941.0338	1640847.8987	1069.05	1068.70	1066.07	14.89	1053.81	
TP-MW-2	467023.8198	1641162.8497	1067.10	1066.54	1063.84	16.10	1050.44	
FPP-MW-1	466851.1582	1641121.3267	1069.55	1069.03	1066.40	19.09	1049.94	
FPP-MW-2	466684.0694	1641248.3903	1069.53	1068.77	1066.20	19.64	1049.13	
FPP-MW-3	466359.2722	1641177.5411	1066.79	1066.29	1063.21	16.05	1050.24	
MW-100	466019.6516	1640892.8071	1066.46	1065.72	1064.91	13.90	1051.82	
MW-101	466863.2039	1641542.3080	1067.02	1066.75	1064.32	21.25	1045.50	
MW-102	466174.3934	1641471.5126	1064.86	1064.37	1062.21	16.48	1047.89	
MW-103	466344.2824	1641759.2190	1065.60	1065.11	1063.35	20.32	1044.79	
MW-104	466654.7950	1642002.6422	1061.66	1061.51	1059.66	17.43	1044.08	
MW-105	466908.7123	1642272.3829	1060.41	1059.60	1058.24	16.70	1042.90	
MW-106	465912.5112	1641603.6856	1060.26	1059.86	1058.36	14.47	1045.39	
MW-107	466183.4339	1642156.8883	1061.68	1061.38	1059.93	17.94	1043.44	
MW-108	466503.9634	1642418.1085	1059.99	1059.58	1057.99	18.64	1040.94	
MW-109	465633.4457	1641747.8304	1062.15	1061.50	1059.30	16.22	1045.28	

TABLE 2D
GROUNDWATER ELEVATION AND SURVEY DATA - JUNE 2015
CLOSED CITY OF YAKIMA LANDFILL SITE

Monitoring Well Identification	Northing	Easting	Elevation					Notes
			Top of Casing Lid	Top of PVC	Ground Surface	Depth to Water	Groundwater	
RG-3	465743.6805	1643122.5822	1042.73	--	--		--	Marked at top of headwall
RG-3	465749.3794	1643126.3722	1037.28	--	--	3.03	1034.25	Marked at bottom of concrete
RG-2	465995.5427	1643101.8587	1041.86	--	--		--	Marked at top of concrete
RG-2	465992.8070	1643103.3163	1039.27	--	--	4.02	1035.25	Marked on top of rock
RG-1	467634.1637	1643083.6968	1053.44	--	--		--	Marked at top of rock
RG-1	467641.7786	1643091.1464	1047.79	--	--	6.57	1041.22	Marked at top of rock
RG-4	464472.3786	1644060.9160	1037.27	--	--		--	Marked at top of rock
RG-4	464474.3282	1644064.8369	1033.79	--	--	2.71	1031.08	Marked at top of hinge

Northings and Eastings are U.S. State Plane 1983, NAD 1983, GEOID 12A, Zone Washington South (4609) and are provided in U.S. survey feet.

Elevations are NAVD88 datum and provided in U.S. survey feet.

MW = Monitoring well

RG = River gauge

**TABLE 3A
GROUNDWATER ANALYTICAL PROGRAM - SEPTEMBER 2014
CLOSED CITY OF YAKIMA LANDFILL SITE**

Analytical Test	Method	Notes	Existing Monitoring Wells													New Monitoring Wells (September 2014)											
			U	D	D	U	U	U	D	D	D	D	U	U	U	U	U	U	MSW	D							
			6	7	8	9A	11	12	14	15	16	17	18	TP-1	TP-2	FPP-3	100	101	102	103	104	105	106	107	108	109	
Metals (Total)	EPA 200.8	As, Ba, Ca, Cd, Cr, Fe, Pb, Mg, Mn, Na, Se, Ag	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Metals (Dissolved)	EPA 200.8	As, Ba, Ca, Cd, Cr, Fe, Pb, Mg, Mn, Na, Se, Ag	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mercury (Total)	EPA 7471		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mercury (Dissolved)	EPA 7470		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hexavalent Chromium (Total)	EPA 7196			X	X (a)	X	X	X		X		X	X			X (a)											
Hexavalent Chromium (Dissolved)	EPA 7196			X	X (a)	X	X	X		X		X	X			X (a)											
Chlorinated Pesticides	EPA 8081 (LL)			X	X	X	X	X		X		X	X			X											
PCBs	EPA 8082 (LL)			X	X	X	X	X		X		X	X			X											
VOCs	EPA 8260 SIM/8260C			X	X	X	X	X		X		X	X			X											
SVOCs	EPA 8270D			X	X	X	X	X		X		X	X			X											
PAHs	EPA 8720 SIM		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TPH-HCID	NWTPH-HCID		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TPH-Dx	NWTPH-Dx w/SGC							X																			
TPH-Dx	NWTPH-Dx w/o SGC							X																			
TPH-G	NWTPH-G																										
Conventionals	EPA 300.0	Fluoride, Nitrate, Nitrite, Chloride, Sulfate	X (a)	X	X	X	X	X	X (a)	X	X (a)	X	X	X (a)	X (a)	X											
Alkalinity (as Ca CO3)	SM2320B			X	X	X	X	X		X		X	X			X											
Bicarbonate (HCO3)	SM2320B			X	X	X	X	X		X		X	X			X											
Ammonia (NH3-N)	EPA 350.1			X	X	X	X	X		X		X	X			X											
TOC	SM5310C			X	X	X	X	X		X		X	X			X											
TDS	SM2540C			X	X	X (a)	X (a)	X (a)		X		X	X (a)			X											

EPA = U.S. Environmental Protection Agency
 HCID = Hydrocarbon Identification
 LL = lower limit
 PAHs = Polycyclic Aromatic Hydrocarbons
 PCBs = Polychlorinated Biphenyls
 SGC = Silica Gel Cleanup
 SVOCs = Semivolatile Organic Compounds

SIM = Select Ion Monitoring
 TDS = Total Dissolved Solids
 TOC = Total Organic Carbon
 TPH = Total Petroleum Hydrocarbons
 TPH-Dx = Diesel-range extended petroleum hydrocarbons
 TPH-G = Gasoline-range petroleum hydrocarbons
 VOCs = Volatile Organic Compounds

Ag = Silver
 As = Arsenic
 Ba = Barium
 Ca = Calcium
 Cd = Cadmium
 Cr = Chromium
 Fe = Iron
 Mg = Magnesium
 Mn = Manganese
 Na = Sodium
 Pb = Lead
 Se = Selenium

U = Upgradient well location
 D = Downgradient well location
 MSW = Municipal solid waste well location

(a) Analyses completed outside the method-recommended hold time.

**TABLE 3B
GROUNDWATER ANALYTICAL PROGRAM - DECEMBER 2014
CLOSED CITY OF YAKIMA LANDFILL SITE**

Analytes	Method	Notes	1	5	6	7	8	9A	10	11	12	14	15	16	17	18	TP-1	TP-2	FPP-1	FPP-2	FPP-3	100	101	102	103	104	105	106	107	108	109	
			Metals (Total)	EPA 200.8	As, Ba, Ca, Cd, Cr, Fe, Pb, Mg, Mn, Na, Se, Ag			X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Metals (Dissolved)	EPA 200.8	As, Ba, Ca, Cd, Cr, Fe, Pb, Mg, Mn, Na, Se, Ag			X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Mercury (Total)	EPA 7471				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Mercury (Dissolved)	EPA 7470				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Hexavalent Chromium (Total)	EPA 7196																															
Hexavalent Chromium (Dissolved)	EPA 7196																															
Chlorinated Pesticides	EPA 8081 (LL)					X	X	X		X	X		X		X	X						X	X	X	X	X	X	X	X	X	X	
PCBs	EPA 8082 (LL)					X	X	X		X	X		X		X	X						X	X	X	X	X	X	X	X	X	X	
VOCs	EPA 8260 SIM/8260C					X	X	X		X	X		X		X	X						X	X	X	X	X	X	X	X	X	X	
SVOCs	EPA 8270D					X	X	X		X	X		X		X	X						X	X	X	X	X	X	X	X	X	X	
PAHs	EPA 8720 SIM					X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	
TPH-HCID	NWTPH-HCID					X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	
TPH-Dx	NWTPH-Dx w/SGC										X						X	X	X	X			X									
TPH-Dx	NWTPH-Dx w/o SGC										X						X	X	X	X			X									
TPH-G	NWTPH-G																															
Conventionals	EPA 300.0	Fluoride, Nitrate, Nitrite, Chloride, Sulfate			X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Alkalinity (as Ca CO3)	SM2320B				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bicarbonate (HCO3)	SM2320B				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ammonia (NH3-N)	EPA 350.1				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TOC	SM5310C				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TDS	SM2540C				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

EPA = U.S. Environmental Protection Agency
 HCID = Hydrocarbon Identification
 LL = lower limit
 PAHs = Polycyclic Aromatic Hydrocarbons
 PCBs = Polychlorinated Biphenyls
 SGC = Silica Gel Cleanup
 SVOCs = Semivolatile Organic Compounds

SIM = Select Ion Monitoring
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 TPH = Total Petroleum Hydrocarbons
 TPH-Dx = Diesel-range extended petroleum hydrocarbons
 TPH-G = Gasoline-range petroleum hydrocarbons
 VOCs = Volatile Organic Compounds

Ag = Silver
 As = Arsenic
 Ba = Barium
 Ca = Calcium
 Cd = Cadmium
 Cr = Chromium
 Fe = Iron
 Mg = Magnesium
 Mn = Manganese
 Na = Sodium
 Pb = Lead
 Se = Selenium

**TABLE 3C
GROUNDWATER ANALYTICAL PROGRAM - MARCH 2015
CLOSED CITY OF YAKIMA LANDFILL SITE**

Analytes	Method	Notes	Groundwater Well																											
			1	5	6	7	8	9A	10	11	12	14	15	16	17	18	TP-1	TP-2	FPP-1	FPP-2	FPP-3	100	101	102	103	104	105	106	107	108
Metals (Total)	EPA 200.8	As, Ba, Ca, Cd, Cr, Fe, K, Pb, Mg, Mn, Na, Se, Ag			X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Metals (Dissolved)	EPA 200.8	As, Ba, Ca, Cd, Cr, Fe, Pb, K, Mg, Mn, Na, Se, Ag			X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mercury (Total)	EPA 7471				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mercury (Dissolved)	EPA 7470				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hexavalent Chromium (Total)	EPA 7196																													
Hexavalent Chromium (Dissolved)	EPA 7196																													
Chlorinated Pesticides	EPA 8081 (LL)					X	X	X		X	X		X		X	X							X	X	X	X	X	X	X	X
PCBs	EPA 8082 (LL)					X	X	X		X	X	X	X	X	X	X							X	X	X	X	X	X	X	X
VOCs	EPA 8260 SIM/8260C					X	X	X		X	X		X		X	X							X	X	X	X	X	X	X	X
SVOCs	EPA 8270D					X	X	X		X	X		X		X	X							X	X	X	X	X	X	X	X
PAHs	EPA 8720 SIM					X	X	X		X	X		X		X	X						X	X	X	X	X	X	X	X	X
TPH-HCID	NWTPH-HCID				X	X	X	X		X		X	X	X	X	X							X	X	X	X	X	X	X	X
TPH-Dx (a)	NWTPH-Dx w/SGC																X	X	X	X			X							
TPH-Dx (a)	NWTPH-Dx w/o SGC																X	X	X	X			X							
TPH-G (a)	NWTPH-G																													
Conventionals	EPA 300.0	Fluoride, Nitrate, Nitrite, Chloride, Sulfate			X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Alkalinity (as Ca CO3)	SM2320B				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bicarbonate (HCO3)	SM2320B				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ammonia (NH3-N)	EPA 350.1				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TOC	SM5310C				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TDS	SM2540C				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

EPA = U.S. Environmental Protection Agency
 HCID = Hydrocarbon Identification
 LL = lower limit
 PAHs = Polycyclic Aromatic Hydrocarbons
 PCBs = Polychlorinated Biphenyls
 SGC = Silica Gel Cleanup
 SVOCs = Semivolatile Organic Compounds

SIM = Select Ion Monitoring
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 TPH = Total Petroleum Hydrocarbons
 TPH-Dx = Diesel-range extended petroleum hydrocarbons
 TPH-G = Gasoline-range petroleum hydrocarbons
 VOCs = Volatile Organic Compounds

Ag = Silver
 As = Arsenic
 Ba = Barium
 Ca = Calcium
 Cd = Cadmium
 Cr = Chromium
 Fe = Iron
 K = Potassium
 Mg = Magnesium
 Mn = Manganese
 Na = Sodium
 Pb = Lead
 Se = Selenium

(a) TPH-Dx and/or TPH-G analyzed based on TPH-HCID results or because of previous detections at that location.

**TABLE 4
GROUNDWATER SCREENING LEVELS PROTECTIVE OF DRINKING WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Maximum Contaminant Level (MCL)				Washington State Board of Health MCLs		Method B Standard Formula Values		Preliminary Method B Groundwater as Drinking Water Cleanup Level (µg/L)	Method A Groundwater Cleanup Level (µg/L)	Screening Level (Protective of Drinking Water) (µg/L)
		MCL (µg/L)	MCL Treatment Technique Action Level (µg/L)	MCL Goal (µg/L)	MCL Secondary (µg/L)	Primary (µg/L)	Secondary (µg/L)	Carcinogen (µg/L)	Non-carcinogen (µg/L)			
PETROLEUM HYDROCARBONS												
	tph, diesel range organics	--	--	--	--	--	--	--	--	--	500	500
	tph, heavy oils	--	--	--	--	--	--	--	--	--	500	500
	tph, mineral oil	--	--	--	--	--	--	--	--	--	500	500
	tph: gasoline range organics, benzene present	--	--	--	--	--	--	--	--	--	800	800
	tph: gasoline range organics, no detectable benzene	--	--	--	--	--	--	--	--	--	1,000	1,000
TOTAL/DISSOLVED METALS												
7440-38-2	arsenic	10	--	--	--	10	--	0.058	4.8	0.058	5.0	5.0
7440-39-3	barium	2,000	--	2,000	--	2,000	--	--	3,200	2,000	--	2,000
7440-43-9	cadmium	5.0	--	5.0	--	5.0	--	--	8.0	5.0	5.0	5.0
	calcium	--	--	--	--	--	--	--	--	--	--	--
7440-47-3	chromium (total)	100	--	100	--	100	--	--	--	--	50 (a)	50
16065-83-1	chromium(III)	100	--	100	--	100	--	--	24,000	100	--	100
18540-29-9	chromium(VI)	100	--	100	--	100	--	--	48	48	--	48
7439-89-6	iron	--	--	--	300	--	300	--	11,200	300	--	300
7439-92-1	lead	--	15	0	--	15	--	--	--	15	15	15
	magnesium	--	--	--	--	--	--	--	--	--	--	--
7439-96-5	manganese	--	--	--	50	--	50	--	2,240	50	--	50
7440-09-7	potassium	--	--	--	--	--	--	--	--	--	--	--
7782-49-2	selenium	50	--	50	--	50	--	--	80	50	--	50
7440-22-4	silver	--	--	--	100	--	100	--	80	80	--	80
7440-23-5	sodium	--	20,000	--	--	--	--	--	--	20,000	--	20,000
7439-97-6	mercury	2.0	--	2.0	--	2.0	--	--	--	2.0	2.0	2.0
CONVENTIONALS												
	total dissolved solids	--	--	--	--	--	--	--	--	--	--	--
16887-00-6	chloride	--	--	--	250,000	--	250,000	--	--	250,000	--	250,000
16984-48-8	fluoride	4,000	--	4,000	2,000	4,000	2,000	--	640	640	--	640
14797-55-8	nitrate	10,000	--	10,000	--	10,000	--	--	25,600	10,000	--	10,000
14797-65-0	nitrite	1,000	--	1,000	--	1,000	--	--	1,600	1,000	--	1,000
	sulfate	--	--	--	--	--	--	--	--	--	--	--
7664-41-7	ammonia	--	--	--	--	--	--	--	--	--	--	--
	alkalinity	--	--	--	--	--	--	--	--	--	--	--
	bicarbonate	--	--	--	--	--	--	--	--	--	--	--
	TOC	--	--	--	--	--	--	--	--	--	--	--
	pH	--	--	--	6.5 to 8.5	--	--	--	--	6.5 to 8.5	--	6.5 to 8.5
CHLORINATED PESTICIDES												
319-84-6	hexachlorocyclohexane,alpha	--	--	--	--	--	--	0.014	--	0.014	--	0.014
58-89-9	lindane (gamma-BHC)	0.20	--	0.20	--	0.20	--	0.080	4.8	0.080	0.20	0.20
319-85-7	hexachlorocyclohexane,beta-	--	--	--	--	--	--	0.049	--	0.049	--	0.049
76-44-8	heptachlor	0.40	--	0	--	0.40	--	0.019	8.0	0.019	--	0.019
319-86-8	hexachlorocyclohexane,delta-	--	--	--	--	--	--	--	--	--	--	--
309-00-2	aldrin	--	--	--	--	--	--	0.003	0.24	0.003	--	0.003
1024-57-3	heptachlor epoxide	0.20	--	0	--	0.20	--	0.005	0.10	0.005	--	0.005
57-74-9	chlordane	2.0	--	0	--	2.0	--	0.25	8.0	0.25	--	0.25
115-29-7	endosulfan	--	--	--	--	--	--	--	96	96	--	96
72-55-9	dde (4,4'-DDE)	--	--	--	--	--	--	0.26	--	0.26	--	0.26
60-57-1	dieldrin	--	--	--	--	--	--	0.005	0.80	0.005	--	0.005
72-20-8	endrin	2.0	--	2.0	--	2.0	--	--	4.8	2.0	--	2.0
72-54-8	ddd (4,4'-DDD)	--	--	--	--	--	--	0.30	--	0.30	--	0.30
50-29-3	ddt (4,4'-DDT)	--	--	--	--	--	--	0.26	8.0	0.26	0.30	0.30
72-43-5	methoxychlor	40	--	40	--	40	--	--	80	40	--	40
118-74-1	hexachlorobenzene	1.0	--	0	--	1.0	--	0.055	13	0.055	--	0.055
8001-35-2	toxaphene	3.0	--	0	--	3.0	--	0.080	--	0.080	--	0.080

**TABLE 4
GROUNDWATER SCREENING LEVELS PROTECTIVE OF DRINKING WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Maximum Contaminant Level (MCL)				Washington State Board of Health MCLs		Method B Standard Formula Values		Preliminary Method B Groundwater as Drinking Water Cleanup Level (µg/L)	Method A Groundwater Cleanup Level (µg/L)	Screening Level (Protective of Drinking Water) (µg/L)
		MCL (µg/L)	MCL Treatment Technique Action Level (µg/L)	MCL Goal (µg/L)	MCL Secondary (µg/L)	Primary (µg/L)	Secondary (µg/L)	Carcinogen (µg/L)	Non-carcinogen (µg/L)			
POLYCHLORINATED BIPHENYLS												
12674-11-2	aroclor 1016	--	--	--	--	--	--	1.3	1.1	1.1	--	1.1
11104-28-2	aroclor 1221	--	--	--	--	--	--	--	--	--	--	--
11141-16-5	aroclor 1232	--	--	--	--	--	--	--	--	--	--	--
53469-21-9	aroclor 1242	--	--	--	--	--	--	--	--	--	--	--
12672-29-6	aroclor 1248	--	--	--	--	--	--	--	--	--	--	--
11097-69-1	aroclor 1254	--	--	--	--	--	--	0.044	0.32	0.044	--	0.044
11096-82-5	aroclor 1260	--	--	--	--	--	--	0.044	--	0.044	--	0.044
	pcb mixtures	0.50	--	0	--	--	--	0.044	--	0.044	0.10	0.10
VOLATILE ORGANIC COMPOUNDS												
75-71-8	dichlorodifluoromethane	--	--	--	--	--	--	--	1,600	1,600	--	1,600
74-87-3	chloromethane	--	--	--	--	--	--	--	--	--	--	--
74-83-9	bromomethane (methyl bromide)	--	--	--	--	--	--	--	11	11	--	11
75-00-3	chloroethane	--	--	--	--	--	--	--	--	--	--	--
75-69-4	trichlorofluoromethane	--	--	--	--	--	--	--	2,400	2,400	--	2,400
75-15-0	carbon disulfide	--	--	--	--	--	--	--	800	800	--	800
67-64-1	acetone	--	--	--	--	--	--	--	7,200	7,200	--	7,200
75-35-4	dichloroethene;1,1-	7.0	--	7.0	--	7.0	--	--	400	7.0	--	7.0
75-09-2	methylene chloride (dichloromethane)	5.0	--	0	--	5.0	--	22	48	5.0	5.0	5.0
107-13-1	acrylonitrile	--	--	--	--	--	--	0.081	320	0.081	--	0.081
1634-04-4	methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	24	--	24	20	20
156-60-5	dichloroethene;1,2-,trans	100	--	100	--	100	--	--	160	100	--	100
75-34-3	dichloroethane;1,1-	--	--	--	--	--	--	7.7	1,600	7.7	--	7.7
78-93-3	methyl ethyl ketone (2-butanone)	--	--	--	--	--	--	--	4,800	4,800	--	4,800
156-59-2	dichloroethene;1,2-,cis	70	--	70	--	70	--	--	16	16	--	16
110-54-3	hexane;n-	--	--	--	--	--	--	--	480	480	--	480
594-20-7	dichloropropane;2,2-	--	--	--	--	--	--	--	--	--	--	--
74-97-5	bromochloromethane	--	--	--	--	--	--	--	--	--	--	--
71-55-6	trichloroethane;1,1,1-	200	--	200	--	200	--	--	16,000	200	200	200
563-58-6	dichloropropene;1,1-	--	--	--	--	--	--	--	--	--	--	--
107-06-2	dichloroethane;1,2-	5.0	--	0	--	5.0	--	0.48	160	0.48	5.0	5.0
71-43-2	benzene	5.0	--	0	--	5.0	--	0.80	32	0.80	5.0	5.0
74-95-3	dibromomethane	--	--	--	--	--	--	--	--	--	--	--
75-27-4	bromodichloromethane (dichlorobromomethane)	--	80	--	0.080	0.080	--	0.71	160	0.080	--	0.080
108-10-1	methyl isobutyl ketone (4-methyl-2-pentanone)	--	--	--	--	--	--	--	640	640	--	640
108-88-3	toluene	1,000	--	1,000	--	1,000	--	--	640	640	1,000	640
10061-01-5	dichloropropene;1,3-, cis	--	--	--	--	--	--	--	--	--	--	--
591-78-6	hexanone;2-	--	--	--	--	--	--	--	--	--	--	--
142-28-9	dichloropropane;1,3-	--	--	--	--	--	--	--	--	--	--	--
127-18-4	tetrachloroethene (PCE)	5.0	--	0	--	5.0	--	21	48	5.0	5.0	5.0
106-93-4	dibromoethane; 1,2- (EDB)	0.050	--	0	--	0.050	--	0.022	--	0.022	0.01	0.01
108-90-7	chlorobenzene	100	--	100	--	100	--	--	160	100	--	100
100-41-4	ethylbenzene	700	--	700	--	70	--	--	800	70	700	70
108-38-3	xylene;m-	--	--	--	--	--	--	--	1,600	1,600	--	1,600
106-42-3	xylene;p-	--	--	--	--	--	--	--	1,600	1,600	--	1,600
100-42-5	styrene	100	--	100	--	100	--	--	1,600	100	--	100
95-47-6	xylene;o-	--	--	--	--	--	--	--	1,600	1,600	--	1,600
1330-20-7	xylene	10,000	--	10,000	--	10,000	--	--	1,600	1,600	1,000	1,000
75-25-2	bromoform	--	--	--	--	--	--	5.5	160	5.5	--	5.5
98-82-8	cumene (isopropylbenzene)	--	--	--	--	--	--	--	800	800	--	800
96-18-4	trichloropropane;1,2,3-	--	--	--	--	--	--	0.001	32	0.001	--	0.001
108-86-1	bromobenzene	--	--	--	--	--	--	--	--	--	--	--
103-65-1	propylbenzene; n-	--	--	--	--	--	--	--	800	800	--	800
95-49-8	chlorotoluene, 2-	--	--	--	--	--	--	--	--	--	--	--
108-67-8	trimethylbenzene; 1,3,5-	--	--	--	--	--	--	--	80	80	--	80
106-43-4	chlorotoluene, 4-	--	--	--	--	--	--	--	--	--	--	--
98-06-6	butylbenzene; tert-	--	--	--	--	--	--	--	800	800	--	800
95-63-6	trimethylbenzene; 1,2,4-	--	--	--	--	--	--	--	--	--	--	--
135-98-8	butylbenzene; sec-	--	--	--	--	--	--	--	800	800	--	800
99-87-6	isopropyltoluene, p-	--	--	--	--	--	--	--	--	--	--	--

**TABLE 4
GROUNDWATER SCREENING LEVELS PROTECTIVE OF DRINKING WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Maximum Contaminant Level (MCL)				Washington State Board of Health MCLs		Method B Standard Formula Values		Preliminary Method B Groundwater as Drinking Water Cleanup Level (µg/L)	Method A Groundwater Cleanup Level (µg/L)	Screening Level (Protective of Drinking Water) (µg/L)
		MCL (µg/L)	MCL Treatment Technique Action Level (µg/L)	MCL Goal (µg/L)	MCL Secondary (µg/L)	Primary (µg/L)	Secondary (µg/L)	Carcinogen (µg/L)	Non-carcinogen (µg/L)			
541-73-1	dichlorobenzene;1,3-	--	--	--	--	--	--	--	--	--	--	
106-46-7	dichlorobenzene;1,4-	75	--	75	--	75	--	8.1	--	8.1	--	
104-51-8	butylbenzene, n-	--	--	--	--	--	--	--	--	--	--	
95-50-1	dichlorobenzene;1,2-	600	--	600	--	600	--	--	720	600	--	
96-12-8	dibromo-3-chloropropane;1,2-	0.20	--	0	--	0.20	--	0.055	1.6	0.055	--	
87-68-3	hexachlorobutadiene	--	--	--	--	--	--	0.56	8.0	0.56	--	
87-61-6	trichlorobenzene;1,2,3-	--	--	--	--	--	--	--	--	--	--	
75-01-4	vinyl chloride	2.0	--	0	--	2.0	--	0.029	24	0.029	0.20	
56-23-5	carbon tetrachloride	5.0	--	0	--	5.0	--	0.63	32	0.63	--	
67-66-3	chloroform	--	--	--	--	80	--	1.4	80	1.4	--	
79-01-6	trichloroethene (TCE)	5.0	--	0	--	5.0	--	0.54	4.0	0.54	5.0	
78-87-5	dichloropropane;1,2-	5.0	--	0	--	5.0	--	1.2	720	1.2	--	
542-75-6	dichloropropene; 1,3-, trans (1,3-dichloropropene)	--	--	--	--	--	--	0.44	240	0.44	--	
79-00-5	trichloroethane;1,1,2-	5.0	--	3.0	--	5.0	--	0.77	32	0.77	--	
124-48-1	dibromochloromethane (chlorodibromomethane)	--	--	--	--	80	--	0.52	160	0.52	--	
630-20-6	tetrachloroethane;1,1,1,2-	--	--	--	--	--	--	1.7	240	1.7	--	
79-34-5	tetrachloroethane;1,1,2,2-	--	--	--	--	--	--	0.22	160	0.22	--	
120-82-1	trichlorobenzene;1,2,4-	70	--	70	--	70	--	1.5	80	1.5	--	
SEMIVOLATILE ORGANIC COMPOUNDS												
110-86-1	pyridine	--	--	--	--	--	--	--	8.0	8.0	--	
62-75-9	nitrosodimethylamine;N-	--	--	--	--	--	--	0.0009	0.064	0.0009	--	
108-95-2	phenol	--	--	--	--	--	--	--	2,400	2,400	--	
62-53-3	aniline	--	--	--	--	--	--	7.7	56	7.7	--	
111-44-4	bis(2-chloroethyl)ether	--	--	--	--	--	--	0.040	--	0.040	--	
95-57-8	chlorophenol;2-	--	--	--	--	--	--	--	40	40	--	
100-51-6	benzyl alcohol	--	--	--	--	--	--	--	800	800	--	
95-48-7	cresol;o- (2-methylphenol)	--	--	--	--	--	--	--	400	400	--	
39638-32-9	bis(2-chloroisopropyl) ether	--	--	--	--	--	--	--	--	--	--	
	cresol; m- & p- (3&4-Methylphenol) (b)	--	--	--	--	--	--	--	400	400	--	
621-64-7	nitroso-di-n-propylamine;N-	--	--	--	--	--	--	0.013	--	0.013	--	
67-72-1	hexachloroethane	--	--	--	--	--	--	1.1	5.6	1.1	--	
98-95-3	nitrobenzene	--	--	--	--	--	--	--	16	16	--	
78-59-1	isophorone	--	--	--	--	--	--	46	1,600	46	--	
88-75-5	nitrophenol, 2-	--	--	--	--	--	--	--	--	--	--	
105-67-9	dimethylphenol;2,4-	--	--	--	--	--	--	--	160	160	--	
65-85-0	benzoic acid	--	--	--	--	--	--	--	64,000	64,000	--	
111-91-1	bis(2-chloroethoxy)methane	--	--	--	--	--	--	--	--	--	--	
120-83-2	dichlorophenol;2,4-	--	--	--	--	--	--	--	24	24	--	
106-47-8	chloroaniline;p- (4-chloroaniline)	--	--	--	--	--	--	0.22	32	0.22	--	
87-65-0	dichlorophenol;2,6-	--	--	--	--	--	--	--	--	--	--	
59-50-7	methylphenol; 4-chloro-3-	--	--	--	--	--	--	--	--	--	--	
77-47-4	hexachlorocyclopentadiene	50	--	50	--	50	--	--	48	48	--	
88-06-2	trichlorophenol;2,4,6-	--	--	--	--	--	--	4.0	8.0	4.0	--	
95-95-4	trichlorophenol;2,4,5-	--	--	--	--	--	--	--	800	800	--	
91-58-7	chloronaphthalene, 2-	--	--	--	--	--	--	--	--	--	--	
88-74-4	nitroaniline, 2-	--	--	--	--	--	--	--	160	160	--	
131-11-3	dimethyl phthalate	--	--	--	--	--	--	--	--	--	--	
606-20-2	dinitrotoluene;2,6-	--	--	--	--	--	--	0.060	16	0.060	--	
99-09-2	nitroaniline, 3-	--	--	--	--	--	--	--	--	--	--	
51-28-5	dinitrophenol;2,4-	--	--	--	--	--	--	--	32	32	--	
100-02-7	nitrophenol, 4-	--	--	--	--	--	--	--	--	--	--	
132-64-9	dibenzofuran	--	--	--	--	--	--	--	16	16	--	
121-14-2	dinitrotoluene;2,4-	--	--	--	--	--	--	0.28	32	0.28	--	
58-90-2	tetrachlorophenol;2,3,4,6-	--	--	--	--	--	--	--	480	480	--	
84-66-2	diethyl phthalate	--	--	--	--	--	--	--	13,000	13,000	--	
7005-72-3	phenylether; 4-chlorophenyl-	--	--	--	--	--	--	--	--	--	--	
100-01-6	nitroaniline, 4-	--	--	--	--	--	--	--	--	--	--	
534-52-1	methylphenol; 4,6-dinitro-2-	--	--	--	--	--	--	--	--	--	--	
86-30-6	nitrosodiphenylamine;N-	--	--	--	--	--	--	18	--	18	--	
103-33-3	azobenzene	--	--	--	--	--	--	0.80	--	0.80	--	

**TABLE 4
GROUNDWATER SCREENING LEVELS PROTECTIVE OF DRINKING WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Maximum Contaminant Level (MCL)				Washington State Board of Health MCLs		Method B Standard Formula Values		Preliminary Method B Groundwater as Drinking Water Cleanup Level (µg/L)	Method A Groundwater Cleanup Level (µg/L)	Screening Level (Protective of Drinking Water) (µg/L)
		MCL (µg/L)	MCL Treatment Technique Action Level (µg/L)	MCL Goal (µg/L)	MCL Secondary (µg/L)	Primary (µg/L)	Secondary (µg/L)	Carcinogen (µg/L)	Non-carcinogen (µg/L)			
101-55-3	phenylether, 4-bromophenyl-	--	--	--	--	--	--	--	--	--	--	
86-74-8	carbazole	--	--	--	--	--	--	--	--	--	--	
84-74-2	di-butyl phthalate (di-n-butyl phthalate)	--	--	--	--	--	--	1,600	1,600	--	1,600	
85-68-7	butyl benzyl phthalate	--	--	--	--	--	--	46	3,200	46	46	
91-94-1	dichlorobenzidine,3,3'	--	--	--	--	--	--	0.20	--	--	0.20	
117-81-7	bis(2-ethylhexyl) phthalate	6.0	--	0	--	6.0	--	6.3	320	6.0	6.0	
117-84-0	di-n-octyl phthalate	--	--	--	--	--	--	--	160	160	160	
91-20-3	naphthalene	--	--	--	--	--	--	--	160	160	160	
91-57-6	methyl naphthalene, 2-	--	--	--	--	--	--	--	32	32	32	
90-12-0	methyl naphthalene, 1-	--	--	--	--	--	--	1.5	560	1.5	1.5	
208-96-8	acenaphthylene	--	--	--	--	--	--	--	--	--	--	
83-32-9	acenaphthene	--	--	--	--	--	--	--	960	960	960	
86-73-7	fluorene	--	--	--	--	--	--	--	640	640	640	
87-86-5	pentachlorophenol	1.0	--	0	--	1.0	--	0.22	80	0.22	0.22	
85-01-8	phenanthrene	--	--	--	--	--	--	--	--	--	--	
120-12-7	anthracene	--	--	--	--	--	--	--	4,800	4,800	4,800	
206-44-0	fluoranthene	--	--	--	--	--	--	--	640	640	640	
129-00-0	pyrene	--	--	--	--	--	--	--	480	480	480	
56-55-3	benzo[a]anthracene	--	--	--	--	--	--	0.12	--	0.12	0.12	
218-01-9	chrysene	--	--	--	--	--	--	12	--	12	12	
205-99-2	benzo[b]fluoranthene	--	--	--	--	--	--	0.12	--	0.12	0.12	
207-08-9	benzo[k]fluoranthene	--	--	--	--	--	--	1.2	--	1.2	1.2	
50-32-8	benzo[a]pyrene	0.20	--	0	--	0.20	--	0.012	--	0.012	0.10	
193-39-5	indeno[1,2,3-cd]pyrene	--	--	--	--	--	--	0.12	--	0.12	0.12	
53-70-3	dibenzo[a,h]anthracene	--	--	--	--	--	--	0.012	--	0.012	0.012	
191-24-2	benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	
	cPAH TEQ	--	--	--	--	--	--	--	--	0.10	0.10	

ARARs = applicable or relevant and appropriate requirements
 BHC = benzene hexachloride
 BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
 CAS = Chemicals Abstracts Service
 DDD = dichlorodiphenyldichloroethane
 DDE = dichlorodiphenyldichloroethylene
 DDT = dichlorodiphenyltrichloroethane

MCL = Maximum Contaminant Level
 PAH = Polycyclic Aromatic Hydrocarbon
 PCB = Polychlorinated biphenyl
 SEMI = Semivolatile
 TPH = Total Petroleum Hydrocarbon
 VOL = Volatile
 µg/L = micrograms per liter

-- = Not Available

Note: Preliminary screening level may be adjusted upward to the practical quantitation limit (PQL) based on analytical laboratory instrument capabilities or to natural/regional background values per MTCA guidelines.

(a) The Method A Groundwater cleanup level is 100 µg/L if no Chromium VI is present.

(b) Screening level for m- & p-cresol is based on criteria for m-cresol (3-methylphenol), as it is more conservative than the criteria for p-cresol (4-methylphenol).

**TABLE 5
GROUNDWATER SCREENING LEVELS PROTECTIVE OF SURFACE WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Surface Water Method B Non cancer (µg/L)	Surface Water Method B Cancer (µg/L)	Surface Water Aquatic Life Fresh/Acute 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Acute CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Acute NTR 40 CFR 131 (µg/L)	Surface Water Aquatic Life Fresh/Chronic 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Chronic CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Chronic NTR 40 CFR 131 (µg/L)	Surface Water Human Health Fresh Water CWA §304 (µg/L)	Surface Water Human Health Fresh Water NTR 40 CFR 131 (µg/L)	Screening Level (Protective of Surface Water) (µg/L)
PETROLEUM HYDROCARBONS												
	tph, diesel range organics	--	--	--	--	--	--	--	--	--	--	--
	tph, heavy oils	--	--	--	--	--	--	--	--	--	--	--
	tph, mineral oil	--	--	--	--	--	--	--	--	--	--	--
	tph: gasoline range organics, benzene present	--	--	--	--	--	--	--	--	--	--	--
	tph: gasoline range organics, no detectable benzene	--	--	--	--	--	--	--	--	--	--	--
TOTAL/DISSOLVED METALS												
7440-38-2	arsenic, inorganic	18	0.10	360	340	360	190	150	190	0.018	0.018	0.018
7440-39-3	barium and compounds	--	--	--	--	--	--	--	--	1,000	--	1,000
7440-43-9	cadmium (potable groundwater and surface water)	--	--	--	--	--	--	--	--	--	--	--
	calcium	--	--	--	--	--	--	--	--	--	--	--
7440-47-3	chromium (total)	--	--	--	--	--	--	--	--	--	--	--
16065-83-1	chromium(III)	240,000	--	176	570	550	57	74	180	--	--	57
18540-29-9	chromium(VI)	490	--	15	16	15	10	11	10	--	--	10
7439-89-6	iron	--	--	--	--	--	--	1,000	--	300	--	300
7439-92-1	lead	--	--	14	65	65	0.54	2.5	2.5	--	--	0.54
	magnesium	--	--	--	--	--	--	--	--	--	--	--
7439-96-5	manganese	--	--	--	--	--	--	--	--	--	--	--
7440-09-7	potassium	--	--	--	--	--	--	--	--	--	--	--
7782-49-2	selenium and compounds	2,700	--	20	--	20	5.0	5.0	5.0	170	--	5.0
7440-22-4	silver	26,000	--	0.32	3.2	3.4	--	--	--	--	--	0.32
	sodium	--	--	--	--	--	--	--	--	--	--	--
7439-97-6	mercury	--	--	2.1	1.4	2.1	0.012	0.77	0.012	--	0.14	0.012
CONVENTIONALS												
	total dissolved solids	--	--	--	--	--	--	--	--	--	--	--
16887-00-6	chloride	--	--	860,000	860,000	--	230,000	230,000	--	--	--	230,000
16984-48-8	fluoride	--	--	--	--	--	--	--	--	--	--	--
14797-55-8	nitrate	--	--	--	--	--	--	--	--	10,000	--	10,000
14797-65-0	nitrite	--	--	--	--	--	--	--	--	--	--	--
	sulfate	--	--	--	--	--	--	--	--	--	--	--
7664-41-7	ammonia	--	--	--	--	--	--	--	--	--	--	--
	alkalinity	--	--	--	--	--	--	--	--	--	--	--
	bicarbonate	--	--	--	--	--	--	--	--	--	--	--
	TOC	--	--	--	--	--	--	--	--	--	--	--
	pH	--	--	--	--	--	--	--	--	--	--	--
CHLORINATED PESTICIDES												
319-84-6	hexachlorocyclohexane;alpha	160	0.008	--	--	--	--	--	--	0.003	0.004	0.003
58-89-9	lindane (gamma-BHC)	6.0	0.045	2.0	0.95	2.0	0.080	--	0.080	0.98	0.019	0.019
319-85-7	hexachlorocyclohexane;beta-	--	0.028	--	--	--	--	--	--	0.009	0.014	0.009
76-44-8	heptachlor	0.12	0.0001	0.52	0.52	0.52	0.004	0.004	0.004	0.0001	0.0002	0.0001
319-86-8	hexachlorocyclohexane;delta-	--	--	--	--	--	--	--	--	0.012	--	0.012
309-00-2	aldrin	0.017	0.0001	2.5	3.0	3.0	0.002	--	--	0.00005	0.0001	0.00005
1024-57-3	heptachlor epoxide	0.003	0.0001	--	0.52	0.52	--	0.004	0.004	0.00004	0.0001	0.00004
57-74-9	chlordane	0.093	0.001	2.4	2.4	2.4	0.004	0.004	0.004	0.001	0.001	0.001
115-29-7	endosulfan	58	--	0.22	--	0.22	0.056	--	0.056	--	--	0.056
72-55-9	dde (4,4'-DDE)	--	0.0004	1.1	--	--	0.001	--	--	0.0002	0.001	0.0002
60-57-1	dieldrin	0.028	0.0001	2.5	0.24	2.5	0.002	0.056	0.002	0.0001	0.0001	0.0001
72-20-8	endrin	0.19	--	0.18	0.086	0.18	0.002	0.036	0.002	0.059	0.76	0.002
72-54-8	ddd (4,4'-DDD)	--	0.001	1.1	--	--	0.001	--	--	0.0003	0.001	0.0003
50-29-3	ddt (4,4'-DDT)	0.024	0.0004	1.1	1.1	1.1	0.001	0.001	0.001	0.0002	0.001	0.0002
72-43-5	methoxychlor	8.1	--	--	--	--	--	0.030	--	100	--	0.030
118-74-1	hexachlorobenzene	0.24	0.0005	--	--	--	--	--	--	0.0003	0.0008	0.0003
8001-35-2	toxaphene	--	0.0005	0.73	0.73	0.73	0.0002	0.0002	0.0002	0.0003	0.001	0.0002

**TABLE 5
GROUNDWATER SCREENING LEVELS PROTECTIVE OF SURFACE WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Surface Water Method B Non cancer (µg/L)	Surface Water Method B Cancer (µg/L)	Surface Water Aquatic Life Fresh/Acute 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Acute CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Acute NTR 40 CFR 131 (µg/L)	Surface Water Aquatic Life Fresh/Chronic 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Chronic CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Chronic NTR 40 CFR 131 (µg/L)	Surface Water Human Health Fresh Water CWA §304 (µg/L)	Surface Water Human Health Fresh Water NTR 40 CFR 131 (µg/L)	Screening Level (Protective of Surface Water) (µg/L)
POLYCHLORINATED BIPHENYLS												
12674-11-2	aroclor 1016	0.006	0.003	--	--	--	--	--	0.014	--	--	0.003
	aroclor 1221	--	--	--	--	--	--	--	--	--	--	--
	aroclor 1232	--	--	--	--	--	--	--	--	--	--	--
	aroclor 1242	--	--	--	--	--	--	--	--	--	--	--
	aroclor 1248	--	--	--	--	--	--	--	--	--	--	--
11097-69-1	aroclor 1254	0.002	0.0001	--	--	--	--	--	0.014	--	--	0.0001
11096-82-5	aroclor 1260	--	--	--	--	--	--	--	0.014	--	--	0.014
	pcb mixtures	--	--	--	--	--	--	--	--	--	--	--
VOLATILE ORGANIC COMPOUNDS												
75-71-8	dichlorodifluoromethane	--	--	--	--	--	--	--	--	--	--	--
74-87-3	chloromethane	--	--	--	--	--	--	--	--	--	--	--
74-83-9	bromomethane (methyl bromide)	960	--	--	--	--	--	--	--	47	48	47
75-00-3	chloroethane	--	--	--	--	--	--	--	--	--	--	--
75-69-4	trichlorofluoromethane	--	--	--	--	--	--	--	--	--	--	--
75-15-0	carbon disulfide	--	--	--	--	--	--	--	--	--	--	--
67-64-1	acetone	--	--	--	--	--	--	--	--	--	--	--
75-35-4	dichloroethene;1,1-	23,000	--	--	--	--	--	--	--	330	0.057	0.057
75-09-2	methylene chloride (dichloromethane)	17,000	3,600	--	--	--	--	--	--	4.6	4.7	4.6
107-13-1	acrylonitrile	3,500	0.40	--	--	--	--	--	--	0.051	0.059	0.051
1634-04-4	methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	--	--	--	--	--
156-60-5	dichloroethene;1,2-,trans	32,000	--	--	--	--	--	--	--	140,000	--	32,000
75-34-3	dichloroethane;1,1-	--	--	--	--	--	--	--	--	--	--	--
78-93-3	methyl ethyl ketone (2-butanone)	--	--	--	--	--	--	--	--	--	--	--
156-59-2	dichloroethene;1,2-,cis	--	--	--	--	--	--	--	--	--	--	--
110-54-3	hexane;n-	--	--	--	--	--	--	--	--	--	--	--
594-20-7	dichloropropane;2,2-	--	--	--	--	--	--	--	--	--	--	--
74-97-5	bromochloromethane	--	--	--	--	--	--	--	--	--	--	--
71-55-6	trichloroethane;1,1,1-	930,000	--	--	--	--	--	--	--	--	--	930,000
563-58-6	dichloropropene;1,1-	--	--	--	--	--	--	--	--	--	--	--
107-06-2	dichloroethane;1,2-	13,000	59	--	--	--	--	--	--	0.38	0.38	0.38
71-43-2	benzene	2,000	23	--	--	--	--	--	--	2.2	1.2	1.2
74-95-3	dibromomethane	--	--	--	--	--	--	--	--	--	--	--
75-27-4	bromodichloromethane (dichlorobromomethane)	14,000	28	--	--	--	--	--	--	0.55	0.27	0.27
108-10-1	methyl isobutyl ketone (4-methyl-2-pentanone)	--	--	--	--	--	--	--	--	--	--	--
108-88-3	toluene	19,000	--	--	--	--	--	--	--	1,300	6,800	1,300
10061-01-5	dichloropropene;1,3-, cis	--	--	--	--	--	--	--	--	--	--	--
591-78-6	hexanone;2-	--	--	--	--	--	--	--	--	--	--	--
142-28-9	dichloropropane;1,3-	--	--	--	--	--	--	--	--	--	--	--
127-18-4	tetrachloroethene (PCE)	502	100	--	--	--	--	--	--	0.69	0.80	0.69
106-93-4	dibromoethane; 1,2- (EDB)	--	--	--	--	--	--	--	--	--	--	--
108-90-7	chlorobenzene	5,200	--	--	--	--	--	--	--	130	680	130
100-41-4	ethylbenzene	6,800	--	--	--	--	--	--	--	530	3,100	530
108-38-3	xylene;m-	--	--	--	--	--	--	--	--	--	--	--
106-42-3	xylene;p-	--	--	--	--	--	--	--	--	--	--	--
100-42-5	styrene	--	--	--	--	--	--	--	--	--	--	--
95-47-6	xylene;o-	--	--	--	--	--	--	--	--	--	--	--
1330-20-7	xylenes	--	--	--	--	--	--	--	--	--	--	--
75-25-2	bromoform	14,000	220	--	--	--	--	--	--	4.3	4.3	4.3
98-82-8	cumene (isopropylbenzene)	--	--	--	--	--	--	--	--	--	--	--
96-18-4	trichloropropane;1,2,3-	--	--	--	--	--	--	--	--	--	--	--
108-86-1	bromobenzene	--	--	--	--	--	--	--	--	--	--	--
103-65-1	propylbenzene;n-	--	--	--	--	--	--	--	--	--	--	--
95-49-8	chlorotoluene, 2-	--	--	--	--	--	--	--	--	--	--	--
108-67-8	trimethylbenzene;1,3,5-	--	--	--	--	--	--	--	--	--	--	--
106-43-4	chlorotoluene, 4-	--	--	--	--	--	--	--	--	--	--	--
98-06-6	tert-butylbenzene	--	--	--	--	--	--	--	--	--	--	--
95-63-6	trimethylbenzene;1,2,4-	--	--	--	--	--	--	--	--	--	--	--
135-98-8	sec-butylbenzene	--	--	--	--	--	--	--	--	--	--	--
99-87-6	isopropyltoluene, p-	--	--	--	--	--	--	--	--	--	--	--

**TABLE 5
GROUNDWATER SCREENING LEVELS PROTECTIVE OF SURFACE WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Surface Water Method B Non cancer (µg/L)	Surface Water Method B Cancer (µg/L)	Surface Water Aquatic Life Fresh/Acute 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Acute CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Acute NTR 40 CFR 131 (µg/L)	Surface Water Aquatic Life Fresh/Chronic 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Chronic CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Chronic NTR 40 CFR 131 (µg/L)	Surface Water Human Health Fresh Water CWA §304 (µg/L)	Surface Water Human Health Fresh Water NTR 40 CFR 131 (µg/L)	Screening Level (Protective of Surface Water) (µg/L)
541-73-1	dichlorobenzene;1,3-	--	--	--	--	--	--	--	--	320	400	320
106-46-7	dichlorobenzene;1,4-	3,200	21	--	--	--	--	--	--	63	400	21
104-51-8	butylbenzene, n-	--	--	--	--	--	--	--	--	--	--	--
95-50-1	dichlorobenzene;1,2-	4,200	--	--	--	--	--	--	--	420	2,700	420
96-12-8	dibromo-3-chloropropane;1,2-	--	--	--	--	--	--	--	--	--	--	--
87-68-3	hexachlorobutadiene	930	30	--	--	--	--	--	--	0.44	0.44	0.44
87-61-6	trichlorobenzene;1,2,3-	--	--	--	--	--	--	--	--	--	--	--
75-01-4	vinyl chloride	6,500	3.7	--	--	--	--	--	--	0.025	2.0	0.025
56-23-5	carbon tetrachloride	550	4.9	--	--	--	--	--	--	0.23	0.25	0.23
67-66-3	chloroform	6,800	55	--	--	--	--	--	--	5.7	5.7	5.7
79-01-6	trichloroethene (TCE)	120	13	--	--	--	--	--	--	2.5	2.7	2.5
78-87-5	dichloropropane;1,2-	57,000	44	--	--	--	--	--	--	0.50	--	0.50
542-75-6	dichloropropene; 1,3-, trans (1,3-dichloropropene)	41,000	34	--	--	--	--	--	--	0.34	10	0.34
79-00-5	trichloroethane;1,1,2-	2,300	25	--	--	--	--	--	--	0.59	0.60	0.59
124-48-1	dibromochloromethane (chlorodibromomethane)	14,000	20	--	--	--	--	--	--	0.40	0.41	0.40
630-20-6	tetrachloroethane;1,1,1,2-	--	--	--	--	--	--	--	--	--	--	--
79-34-5	tetrachloroethane;1,1,2,2-	10,000	6.5	--	--	--	--	--	--	0.17	0.17	0.17
120-82-1	trichlorobenzene;1,2,4-	240	2.0	--	--	--	--	--	--	35	--	2.0
SEMIVOLATILE ORGANIC COMPOUNDS												
110-86-1	pyridine	--	--	--	--	--	--	--	--	--	--	--
62-75-9	nitrosodimethylamine;N-	800	4.9	--	--	--	--	--	--	0.001	0.001	0.001
108-95-2	phenol	560,000	--	--	--	--	--	--	--	21,000	21,000	21,000
62-53-3	aniline	--	--	--	--	--	--	--	--	--	--	--
111-44-4	bis(2-chloroethyl)ether	--	0.85	--	--	--	--	--	--	0.030	0.031	0.030
95-57-8	chlorophenol;2-	100	--	--	--	--	--	--	--	--	--	100
100-51-6	benzyl alcohol	--	--	--	--	--	--	--	--	--	--	--
95-48-7	cresol;o- (2-methylphenol)	--	--	--	--	--	--	--	--	--	--	--
39638-32-9	bis(2-chloroisopropyl) ether	--	--	--	--	--	--	--	--	1,400	1,400	1,400
	cresol; m- & p- (3&4-Methylphenol)	--	--	--	--	--	--	--	--	--	--	--
621-64-7	nitroso-di-n-propylamine;N-	--	0.84	--	--	--	--	--	--	0.005	--	0.005
67-72-1	hexachloroethane	21	1.9	--	--	--	--	--	--	1.4	1.9	1.4
98-95-3	nitrobenzene	1,800	--	--	--	--	--	--	--	17	17	17
78-59-1	isophorone	120,000	1,600	--	--	--	--	--	--	35	8.4	8.4
88-75-5	nitrophenol, 2-	--	--	--	--	--	--	--	--	--	--	--
105-67-9	dimethylphenol;2,4-	550	--	--	--	--	--	--	--	380	--	380
65-85-0	benzoic acid	--	--	--	--	--	--	--	--	--	--	--
111-91-1	bis(2-chloroethoxy)methane	--	--	--	--	--	--	--	--	--	--	--
120-83-2	dichlorophenol;2,4-	190	--	--	--	--	--	--	--	77	93	77
106-47-8	chloroaniline;p- (4-chloroaniline)	--	--	--	--	--	--	--	--	--	--	--
87-65-0	dichlorophenol;2,6-	--	--	--	--	--	--	--	--	--	--	--
59-50-7	methylphenol; 4-chloro-3-	--	--	--	--	--	--	--	--	--	--	--
77-47-4	hexachlorocyclopentadiene	3,600	--	--	--	--	--	--	--	40	240	40
88-06-2	trichlorophenol;2,4,6-	17	3.9	--	--	--	--	--	--	1.4	2.1	1.4
95-95-4	trichlorophenol;2,4,5-	--	--	--	--	--	--	--	--	1,800	--	1,800
91-58-7	chloronaphthalene, 2-	--	--	--	--	--	--	--	--	--	--	--
88-74-4	nitroaniline, 2-	--	--	--	--	--	--	--	--	--	--	--
131-11-3	dimethyl phthalate	--	--	--	--	--	--	--	--	270,000	310,000	270,000
606-20-2	dinitrotoluene;2,6-	--	--	--	--	--	--	--	--	--	--	--
99-09-2	nitroaniline, 3-	--	--	--	--	--	--	--	--	--	--	--
51-28-5	dinitrophenol;2,4-	3,500	--	--	--	--	--	--	--	69	70	69
100-02-7	nitrophenol, 4-	--	--	--	--	--	--	--	--	--	--	--
132-64-9	dibenzofuran	--	--	--	--	--	--	--	--	--	--	--
121-14-2	dinitrotoluene;2,4-	1,400	5.5	--	--	--	--	--	--	0.11	0.11	0.11
58-90-2	tetrachlorophenol;2,3,4,6-	--	--	--	--	--	--	--	--	--	--	--
84-66-2	diethyl phthalate	28,000	--	--	--	--	--	--	--	17,000	23,000	17,000
7005-72-3	phenylether; 4-chlorophenyl-	--	--	--	--	--	--	--	--	--	--	--
100-01-6	nitroaniline, 4-	--	--	--	--	--	--	--	--	--	--	--
534-52-1	methylphenol; 4,6-dinitro-2-	--	--	--	--	--	--	--	--	--	--	--
86-30-6	nitrosodiphenylamine;N-	--	9.4	--	--	--	--	--	--	3.3	5.0	3.3
103-33-3	azobenzene	--	--	--	--	--	--	--	--	--	--	--

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CAS Number	Chemical Name	Surface Water Method B Non cancer (µg/L)	Surface Water Method B Cancer (µg/L)	Surface Water Aquatic Life Fresh/Acute 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Acute CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Acute NTR 40 CFR 131 (µg/L)	Surface Water Aquatic Life Fresh/Chronic 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Chronic CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Chronic NTR 40 CFR 131 (µg/L)	Surface Water Human Health Fresh Water CWA §304 (µg/L)	Surface Water Human Health Fresh Water NTR 40 CFR 131 (µg/L)	Screening Level (Protective of Surface Water) (µg/L)
101-55-3	phenylether; 4-bromophenyl-	--	--	--	--	--	--	--	--	--	--	--
86-74-8	carbazole	--	--	--	--	--	--	--	--	--	--	--
84-74-2	di-butyl phthalate (di-n-butyl phthalate)	2,900	--	--	--	--	--	--	--	2,000	2,700	2,000
85-68-7	butyl benzyl phthalate	1,300	8.3	--	--	--	--	--	--	1,500	--	8.3
91-94-1	dichlorobenzidine;3,3'-	--	0.046	--	--	--	--	--	--	0.021	0.040	0.021
117-81-7	bis(2-ethylhexyl) phthalate	400	3.6	--	--	--	--	--	--	1.2	1.8	1.2
117-84-0	di-n-octyl phthalate	--	--	--	--	--	--	--	--	--	--	--
91-20-3	naphthalene	4,700	--	--	--	--	--	--	--	--	--	4,700
91-57-6	methyl naphthalene;2-	--	--	--	--	--	--	--	--	--	--	--
90-12-0	methyl naphthalene;1-	--	--	--	--	--	--	--	--	--	--	--
208-96-8	acenaphthylene	--	--	--	--	--	--	--	--	--	--	--
83-32-9	acenaphthene	650	--	--	--	--	--	--	--	670	--	650
86-73-7	fluorene	3,500	--	--	--	--	--	--	--	1,100	1,300	1,100
87-86-5	pentachlorophenol	1,200	1.5	20	19	20	13	15	13	0.27	0.28	0.27
85-01-8	phenanthrene	--	--	--	--	--	--	--	--	--	--	--
120-12-7	anthracene	26,000	--	--	--	--	--	--	--	8,300	9,600	8,300
206-44-0	fluoranthene	86	--	--	--	--	--	--	--	130	300	86
129-00-0	pyrene	2,600	--	--	--	--	--	--	--	830	960	830
56-55-3	benzo[a]anthracene	--	0.30	--	--	--	--	--	--	0.004	0.003	0.003
218-01-9	chrysene	--	30	--	--	--	--	--	--	0.004	0.003	0.003
205-99-2	benzo[b]fluoranthene	--	0.30	--	--	--	--	--	--	0.004	0.003	0.003
207-08-9	benzo[k]fluoranthene	--	3.0	--	--	--	--	--	--	0.004	0.003	0.003
50-32-8	benzo[a]pyrene	--	0.030	--	--	--	--	--	--	0.004	0.003	0.003
193-39-5	indeno[1,2,3-cd]pyrene	--	0.30	--	--	--	--	--	--	0.004	0.003	0.003
53-70-3	dibenzo[a,h]anthracene	--	0.030	--	--	--	--	--	--	0.004	0.003	0.003
191-24-2	benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--
	cPAH TEQ	--	--	--	--	--	--	--	--	--	--	--

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
 CAS = Chemicals Abstracts Service
 DDD = dichlorodiphenyldichloroethane
 DDE = dichlorodiphenyldichloroethylene
 DDT = dichlorodiphenyltrichloroethane

PAH = Polycyclic Aromatic Hydrocarbon
 PCB = Polychlorinated biphenyl
 SEMI = Semivolatile
 TPH = Total Petroleum Hydrocarbon
 VOL = Volatile
 µg/L = micrograms per liter

-- = Not Available

Note: Preliminary screening level may be adjusted upward to the practical quantitation limit (PQL) based on analytical laboratory instrument capabilities or natural/regional background values based on MTCA guidelines.

**TABLE 6
REPORTING LIMIT, QUANTITATION LIMIT, AND SCREENING LEVEL EVALUATION - GROUNDWATER ANALYSIS
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Screening Level	Screening Level	Background Concentration (Natural or Regional as noted) (µg/L)	ALS Global		Groundwater Screening Level (µg/L)
		Groundwater Protective of Drinking Water (Table 4) (µg/l)	Groundwater Protective of Surface Water (Table 5) (µg/L)		Reporting Limit (µg/L)	Quantitation Limit (µg/L)	
PETROLEUM HYDROCARBONS							
	tph, diesel range organics	500	--		130	119	500
	tph, heavy oils	500	--		250	109	500
	tph, mineral oil	500	--		250	109	500
	tph: gasoline range organics, benzene present	800	--		50.0	29.3	800
	tph: gasoline range organics, no detectable benzene	1,000	--		50.0	29.3	1,000
TOTAL/DISSOLVED METALS							
7440-38-2	arsenic, inorganic	5.0	0.018	10.7 (c)	1.00	0.45	0.45
7440-39-3	barium and compounds	2,000	1,000		1.00	0.67	1,000
7440-43-9	cadmium (potable groundwater and surface water)	5.0	--		1.00	0.36	5.0
	calcium	--	--		50.0	10.6	--
7440-47-3	chromium (total)	50	--		2.00	0.29	50
16065-83-1	chromium(III)	100	57		--	--	57
18540-29-9	chromium(VI)	48	10		10.0	5.40	10
7439-89-6	iron	300	300		50.0	17.3	300
7439-92-1	lead	15	0.54		1.00	0.28	0.54
	magnesium	--	--		50.0	27.4	--
7439-96-5	manganese	50	--		2.00	0.34	50
7440-09-7	potassium	--	--		50	6.93	--
7782-49-2	selenium and compounds	50	5.0		4.00	3.41	5.0
7440-22-4	silver	80	0.32		1.00	0.20	0.32
	sodium	20,000	--		50.0	32.0	20,000
7439-97-6	mercury	2.0	0.012		0.20	0.11	0.11
CONVENTIONALS							
	total dissolved solids	--	--		5,000	5,000	--
16887-00-6	chloride	250,000	230,000		92.0	92.0	230,000
16984-48-8	fluoride	640	--		160	160	640
14797-55-8	nitrate	10,000	10,000		153	150	10,000
14797-65-0	nitrite	1,000	--		142.6	143	1,000
	sulfate	--	--		260	260	--
7664-41-7	ammonia	--	--		10.0	10.0	--
	alkalinity	--	--		15,000	15,000	--
	bicarbonate	--	--		15,000	15,000	--
	TOC	--	--		5,000	5,000	--
	pH	6.5 to 8.5	--		--	--	6.5 to 8.5
CHLORINATED PESTICIDES							
319-84-6	hexachlorocyclohexane;alpha	0.014	0.003		0.01	0.01	0.01
58-89-9	lindane (gamma-BHC)	0.20	0.019		0.01	0.01	0.019
319-85-7	hexachlorocyclohexane;beta-	0.049	0.009		0.01	0.01	0.01
76-44-8	heptachlor	0.019	0.0001		0.01	0.01	0.01
319-86-8	hexachlorocyclohexane;delta-	--	0.012		0.01	0.01	0.012
309-00-2	aldrin	0.003	0.00005		0.01	0.01	0.01
1024-57-3	heptachlor epoxide	0.005	0.00004		0.01	0.01	0.01
57-74-9	chlordane	0.25	0.001		0.20	0.20	0.20
115-29-7	endosulfan	96	0.056		0.01	0.01	0.056
72-55-9	dde (4,4'-DDE)	0.26	0.0002		0.01	0.01	0.01
60-57-1	dieldrin	0.005	0.0001		0.01	0.01	0.01
72-20-8	endrin	2.0	0.002		0.01	0.01	0.01
72-54-8	ddd (4,4'-DDD)	0.30	0.0003		0.01	0.01	0.01
50-29-3	ddt (4,4'-DDT)	0.30	0.0002		0.01	0.01	0.01
72-43-5	methoxychlor	40	0.030		0.01	0.01	0.030
118-74-1	hexachlorobenzene	0.055	0.0003		0.01	0.01	0.01
8001-35-2	toxaphene	0.080	0.0002		0.50	0.50	0.50

TABLE 6
REPORTING LIMIT, QUANTITATION LIMIT, AND SCREENING LEVEL EVALUATION - GROUNDWATER ANALYSIS
CLOSED CITY OF YAKIMA LANDFILL SITE

CAS Number	Chemical Name	Screening Level	Screening Level	Background Concentration (Natural or Regional as noted) (µg/L)	ALS Global		Groundwater Screening Level (µg/L)
		Groundwater Protective of Drinking Water (Table 4) (µg/l)	Groundwater Protective of Surface Water (Table 5) (µg/L)		Reporting Limit (µg/L)	Quantitation Limit (µg/L)	
POLYCHLORINATED BIPHENYLS							
12674-11-2	aroclor 1016	1.1	0.003		0.005	0.005	0.005
	aroclor 1221	--	--		0.01	0.01	--
	aroclor 1232	--	--		0.005	0.005	--
	aroclor 1242	--	--		0.005	0.005	--
	aroclor 1248	--	--		0.005	0.005	--
11097-69-1	aroclor 1254	0.044	0.0001		0.005	0.005	0.005
11096-82-5	aroclor 1260	0.044	0.014		0.005	0.005	0.014
	pcb mixtures	0.10	--		--	--	0.10
VOLATILE ORGANIC COMPOUNDS (VOCs)							
75-71-8	dichlorodifluoromethane	1,600	--		2.00	0.094	1,600
74-87-3	chloromethane	--	--		2.00	0.23	--
74-83-9	bromomethane (methyl bromide)	11	47		2.00	0.14	11
75-00-3	chloroethane	--	--		2.00	0.116	--
75-69-4	trichlorofluoromethane	2,400	--		2.00	0.045	2,400
75-15-0	carbon disulfide	800	--		0.10	0.0542	800
67-64-1	acetone	7,200	--		25.0	0.68	7,200
75-35-4	dichloroethene;1,1-	7.0	0.057		2.00	0.014	0.057
75-09-2	methylene chloride (dichloromethane)	5.0	4.6		5.00	0.68	4.6
107-13-1	acrylonitrile	0.081	0.051		10.0	0.0572	0.0572
1634-04-4	methyl tert-butyl ether (MTBE)	20	--		2.00	0.0343	20
156-60-5	dichloroethene;1,2-,trans	100	32,000		2.00	0.097	100
75-34-3	dichloroethane;1,1-	7.7	--		2.00	0.030	7.7
78-93-3	methyl ethyl ketone (2-butanone)	4,800	--		10.0	1.41	4,800
156-59-2	dichloroethene;1,2-,cis	16	--		2.00	0.068	16
110-54-3	hexane;n-	480	--		2.00	0.618	480
594-20-7	dichloropropane;2,2-	--	--		2.00	0.041	--
74-97-5	bromochloromethane	--	--		2.00	0.115	--
71-55-6	trichloroethane;1,1,1-	200	930,000		2.00	0.059	200
563-58-6	dichloropropene;1,1-	--	--		2.00	0.067	--
107-06-2	dichloroethane;1,2-	5.0	0.38		2.00	0.014	0.38
71-43-2	benzene	5.0	1.2		2.00	0.028	1.2
74-95-3	dibromomethane	--	--		2.00	0.071	--
75-27-4	bromodichloromethane (dichlorobromomethane)	0.080	0.27		2.00	0.059	0.080
108-10-1	methyl isobutyl ketone (4-methyl-2-pentanone)	640	--		10.0	0.341	640
108-88-3	toluene	640	1,300		2.00	0.015	640
10061-01-5	dichloropropene;1,3-, cis	--	--		2.00	0.048	--
591-78-6	hexanone;2-	--	--		10.0	0.94	--
142-28-9	dichloropropane;1,3-	--	--		2.00	0.066	--
127-18-4	tetrachloroethene (PCE)	5.0	0.69		2.00	0.023	0.69
106-93-4	dibromoethane; 1,2- (EDB)	0.010	--		0.01	0.01	0.01
108-90-7	chlorobenzene	100	130		2.00	0.024	100
100-41-4	ethylbenzene	70	530		2.00	0.029	70
108-38-3	xylene;m-	1,600	--		4.00	0.11	1,600
106-42-3	xylene;p-	1,600	--		4.00	0.11	1,600
100-42-5	styrene	100	--		2.00	0.020	100
95-47-6	xylene;o-	1,600	--		2.00	0.069	1,600
1330-20-7	xylenes	1,000	--		4.00	0.11	1,000
75-25-2	bromoform	5.5	4.3		2.00	0.053	4.3
98-82-8	cumene (isopropylbenzene)	800	--		2.00	0.0381	800
96-18-4	trichloropropane;1,2,3-	0.001	--		2.00	0.023	0.023
108-86-1	bromobenzene	--	--		2.00	0.041	--
103-65-1	propylbenzene;n-	800	--		2.00	0.036	800
95-49-8	chlorotoluene, 2-	--	--		2.00	0.032	--
108-67-8	trimethylbenzene;1,3,5-	80	--		2.00	0.041	80
106-43-4	chlorotoluene, 4-	--	--		2.00	0.040	--
98-06-6	t-butylbenzene	800	--		2.00	0.051	800
95-63-6	trimethylbenzene;1,2,4-	--	--		2.00	0.054	--
135-98-8	s-butylbenzene	800	--		2.00	0.019	800
99-87-6	isopropyltoluene, p-	--	--		2.00	0.035	--

TABLE 6
REPORTING LIMIT, QUANTITATION LIMIT, AND SCREENING LEVEL EVALUATION - GROUNDWATER ANALYSIS
CLOSED CITY OF YAKIMA LANDFILL SITE

CAS Number	Chemical Name	Screening Level	Screening Level	Background Concentration (Natural or Regional as noted) (µg/L)	ALS Global		Groundwater Screening Level (µg/L)
		Groundwater Protective of Drinking Water (Table 4) (µg/l)	Groundwater Protective of Surface Water (Table 5) (µg/L)		Reporting Limit (µg/L)	Quantitation Limit (µg/L)	
541-73-1	dichlorobenzene;1,3-	--	320		2.00	0.0413	320
106-46-7	dichlorobenzene;1,4-	8.1	21		2.00	0.045	8.1
104-51-8	butylbenzene, n-	--	--		2.00	0.053	--
95-50-1	dichlorobenzene;1,2-	600	420		2.00	0.028	420
96-12-8	dibromo-3-chloropropane;1,2-	0.055	--		10.0	0.0997	0.0997
87-68-3	hexachlorobutadiene	0.56	0.44		0.01	0.01	0.44
87-61-6	trichlorobenzene;1,2,3-	--	--		2.00	0.045	--
75-01-4	vinyl chloride	0.20	0.025		0.031	0.0314	0.031
56-23-5	carbon tetrachloride	0.63	0.23		0.10	0.025	0.23
67-66-3	chloroform	1.4	5.7		0.10	0.10	1.4
79-01-6	trichloroethene (TCE)	5.0	2.5		0.02	0.020	2.5
78-87-5	dichloropropane;1,2-	1.2	0.50		0.10	0.063	0.50
542-75-6	dichloropropene; 1,3-, trans (1,3-dichloropropene)	0.44	0.34		0.10	0.0576	0.34
79-00-5	trichloroethane;1,1,2-	0.77	0.59		0.10	0.052	0.59
124-48-1	dibromochloromethane (chlorodibromomethane)	0.52	0.40		0.10	0.074	0.40
630-20-6	tetrachloroethane;1,1,1,2-	1.7	--		0.10	0.087	1.7
79-34-5	tetrachloroethane;1,1,2,2-	0.22	0.17		0.10	0.029	0.17
120-82-1	trichlorobenzene;1,2,4-	1.5	2.0		0.10	0.047	1.5
SEMIVOLATILE ORGANIC COMPOUNDS							
110-86-1	pyridine	8.0	--		2.00	2.00	8.0
62-75-9	nitrosodimethylamine;N-	0.0009	0.0007		2.00	1.51	1.51
108-95-2	phenol	2,400	21,000		2.00	1.05	2,400
62-53-3	aniline	7.7	--		2.00	2.00	7.7
111-44-4	bis(2-chloroethyl)ether	0.040	0.030		2.00	0.94	0.94
95-57-8	chlorophenol;2-	40	100		2.00	0.85	40
100-51-6	benzyl alcohol	800	--		2.00	1.03	800
95-48-7	cresol;o- (2-methylphenol)	400	--		2.00	1.29	400
39638-32-9	bis(2-chloroisopropyl) ether	--	1,400		2.00	0.62	1,400
	cresol; m- & p- (3&4-Methylphenol) (b)	400	--		2.00	0.810	400
621-64-7	nitroso-di-n-propylamine;N-	0.013	0.005		2.00	2.00	2.0
67-72-1	hexachloroethane	1.1	1.4		2.00	2.00	2.0
98-95-3	nitrobenzene	16	17		2.00	1.19	16
78-59-1	isophorone	46	8.4		2.00	1.17	8.4
88-75-5	nitrophenol, 2-	--	--		2.00	1.14	--
105-67-9	dimethylphenol;2,4-	160	380		2.00	0.87	160
65-85-0	benzoic acid	64,000	--		10.0	2.44	64,000
111-91-1	bis(2-chloroethoxy)methane	--	--		2.00	1.05	--
120-83-2	dichlorophenol;2,4-	24	77		2.00	0.79	24
106-47-8	chloroaniline;p- (4-chloroaniline)	0.22	--		2.00	1.89	1.89
87-65-0	dichlorophenol;2,6-	--	--		2.00	0.75	--
59-50-7	methylphenol; 4-chloro-3-	--	--		2.00	1.19	--
77-47-4	hexachlorocyclopentadiene	48	40		2.00	2.00	40
88-06-2	trichlorophenol;2,4,6-	4.0	1.4		2.00	0.90	1.4
95-95-4	trichlorophenol;2,4,5-	800	1,800		2.00	1.53	800
91-58-7	chloronaphthalene, 2-	--	--		2.00	0.90	--
88-74-4	nitroaniline, 2-	160	--		2.00	0.76	160
131-11-3	dimethyl phthalate	--	270,000		2.00	0.69	270,000
606-20-2	dinitrotoluene;2,6-	0.060	--		2.00	1.82	1.82
99-09-2	nitroaniline, 3-	--	--		5.00	1.35	--
51-28-5	dinitrophenol;2,4-	32	69		10.0	2.93	32
100-02-7	nitrophenol, 4-	--	--		2.00	2.00	--
132-64-9	dibenzofuran	16	--		2.00	0.51	16
121-14-2	dinitrotoluene;2,4-	0.28	0.11		2.00	0.78	0.78
58-90-2	tetrachlorophenol;2,3,4,6-	480	--		2.00	1.06	480
84-66-2	diethyl phthalate	13,000	17,000		2.00	0.80	13,000
7005-72-3	phenylether; 4-chlorophenyl-	--	--		2.00	0.74	--
100-01-6	nitroaniline, 4-	--	--		2.00	2.00	--
534-52-1	methylphenol; 4,6-dinitro-2-	--	--		2.00	2.00	--
86-30-6	nitrosodiphenylamine;N-	18	3.3		2.00	0.92	3.3
103-33-3	azobenzene	0.80	--		2.00	1.63	1.63

TABLE 6
REPORTING LIMIT, QUANTITATION LIMIT, AND SCREENING LEVEL EVALUATION - GROUNDWATER ANALYSIS
CLOSED CITY OF YAKIMA LANDFILL SITE

CAS Number	Chemical Name	Screening Level	Screening Level	Background Concentration (Natural or Regional as noted) (µg/L)	ALS Global		Groundwater Screening Level (µg/L)
		Groundwater Protective of Drinking Water (Table 4) (µg/l)	Groundwater Protective of Surface Water (Table 5) (µg/L)		Reporting Limit (µg/L)	Quantitation Limit (µg/L)	
101-55-3	phenylether; 4-bromophenyl-	--	--		2.00	0.79	--
86-74-8	carbazole	--	--		2.00	1.66	--
84-74-2	di-butyl phthalate	1,600	2,000		2.00	0.83	1,600
85-68-7	butyl benzyl phthalate	46	8.3		2.00	0.67	8.3
91-94-1	dichlorobenzidine;3,3'-	0.20	0.021		2.00	2.00	2.0
117-81-7	bis(2-ethylhexyl) phthalate	6.0	1.2		2.00	0.81	1.2
117-84-0	di-n-octyl phthalate	160	--		2.00	0.87	160
91-20-3	naphthalene	160	4,700		0.02	0.0115	160
91-57-6	methyl naphthalene;2-	32	--		0.02	0.0131	32
90-12-0	methyl naphthalene;1-	1.5	--		0.02	0.0098	1.5
208-96-8	acenaphthylene	--	--		0.02	0.0296	--
83-32-9	acenaphthene	960	650		0.02	0.0258	650
86-73-7	fluorene	640	1,100		0.02	0.0421	640
87-86-5	pentachlorophenol	0.22	0.27		0.50	0.232	0.23
85-01-8	phenanthrene	--	--		0.02	0.0224	--
120-12-7	anthracene	4,800	8,300		0.02	0.0273	4,800
206-44-0	fluoranthene	640	86		0.02	0.0133	86
129-00-0	pyrene	480	830		0.02	0.0113	480
56-55-3	benzo[a]anthracene	0.12	0.003		0.02	0.00940	0.00940
218-01-9	chrysene	12	0.003		0.02	0.00940	0.00940
205-99-2	benzo[b]fluoranthene	0.12	0.003		0.02	0.00730	0.00730
207-08-9	benzo[k]fluoranthene	1.2	0.003		0.02	0.0237	0.0237
50-32-8	benzo[a]pyrene	0.10	0.003		0.02	0.0104	0.0104
193-39-5	indeno[1,2,3-cd]pyrene	0.12	0.003		0.02	0.0164	0.0164
53-70-3	dibenzo[a,h]anthracene	0.012	0.003		0.02	0.0127	0.0127
191-24-2	benzo(g,h,i)perylene	--	--		0.02	0.0166	--
	cPAH TEQ	0.10	--		--	--	0.10

CAS = Chemicals Abstracts Service
 DDD = dichlorodiphenyldichloroethane
 DDE = dichlorodiphenyldichloroethylene
 DDT = dichlorodiphenyltrichloroethane
 PCB = Polychlorinated biphenyl
 PQL = Practical quantitation limit
 PSL = Preliminary screening level

RL = Reporting limit
 SEMI = Semivolatile
 SIM = Selected ion monitoring
 TPH = Total Petroleum Hydrocarbon
 VOL = Volatile
 µg/L = micrograms per liter

-- = Not Available

(a) Method A groundwater cleanup level is 100 µg/L if no chromium VI is present.

(b) Screening level for m- & p-cresol based on criteria for m-cresol (3-methylphenol), as it is more conservative than the criteria for p-cresol (4-methylphenol).

(c) Represents the natural background value for arsenic as established by Ecology (June 2010).

**TABLE 7
SOIL SCREENING LEVELS
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Groundwater Screening Level (Table 6) (µg/L)	Leaching to GW Model Inputs				Protection of GW (3-Phase Model) mg/kg	SOIL - Direct Contact Pathway (Ingestion Only) Method B: Unrestricted Land Use Standard Formula Values		Method B Preliminary Soil Cleanup Level (mg/kg)	Background Soil Metals Concentrations Statewide (mg/kg) 90 percentile value (a)	Method A Soil Unrestricted Land Use (mg/kg)	ALS Global		Screening Level (mg/kg)
			Koc	Kd	Hcc	S		Carcinogen (mg/kg)	Non-carcinogen (mg/kg)				Reporting Limit (mg/kg)	Quantitation Limit (mg/kg)	
			L/kg @ pH=6.8	L/kg # @ pH 6.8 for metals	unitless	mg/l									
PETROLEUM HYDROCARBONS															
	TPH, diesel-range organics	500	--	--	--	--	--	--	--	--	--	2,000	25	11.8	2,000
	TPH, heavy oils	500	--	--	--	--	--	--	--	--	--	2,000	50	22.9	2,000
	TPH, mineral oil	500	--	--	--	--	--	--	--	--	--	4,000	50	22.9	4,000
	TPH, gasoline-range organics, benzene present	800	--	--	--	--	--	--	--	--	--	30	3	1.46	30
	TPH, gasoline-range organics, no detectable benzene	1,000	--	--	--	--	--	--	--	--	--	100	3	1.46	100
METALS															
7440-38-2	arsenic	0.45	--	29	0	--	0.26	0.67	24	0.26	7.0	20	1	0.730	20
7440-39-3	barium	1,000	--	41	0	--	824	--	16,000	824	--	--	0.5	0.140	824 (b)
7440-43-9	cadmium	5.0	--	6.7	0	--	0.69	--	--	0.69	1.0	2.0	0.5	0.225	2.0
	calcium	--	--	--	--	--	--	--	--	--	--	--	50.0	22.4	--
7440-47-3	chromium (total)	50	--	1,000	0	--	1,000	--	--	1,000	42	see Cr III or Cr VI	0.5	0.37	see Cr III or Cr VI
16065-83-1	chromium(III)	57	--	1,800,000	0	--	1,000,000	--	120,000	120,000	--	2,000	0.5	0.37	2,000
18540-29-9	chromium(VI)	10	--	19	0	--	3.8	--	240	3.8	--	19	5	2.70	19
7439-89-6	iron	300	--	25	0	--	151	--	56,000	151	43,100	--	50	33.6	151 (b)
7439-92-1	lead	0.54	--	10,000	0	--	108	--	--	108	17	250	0.5	0.235	250
	magnesium	--	--	--	--	--	--	--	--	--	--	--	50	27.9	--
7439-96-5	manganese	50	--	--	--	--	--	--	11,000	11,000	1,100	--	0.5	0.290	11,000
7440-09-7	potassium	--	--	--	--	--	--	--	--	--	--	--	50	17.8	--
7782-49-2	selenium	5.0	--	5	0	--	0.52	--	400	0.52	--	--	5	3.21	400
7440-22-4	silver	0.32	--	8.3	0	--	0.054	--	400	0.054	--	--	0.5	0.230	400
7440-23-5	sodium	20,000	--	--	--	--	--	--	--	--	--	--	50	26	--
7439-97-6	mercury	0.11	--	52	0.47	--	0.11	--	--	0.11	0.070	2.0	0.02	0.00407	2.0
CONVENTIONALS															
	chloride	230,000	--	--	--	--	--	--	--	--	--	--	1.0	0.92	--
16984-48-8	fluoride	640	--	--	--	--	--	--	3,200	3,200	--	--	1	NA	3,200
14797-55-8	nitrate	10,000	--	--	--	--	--	--	130,000	130,000	--	--	3	NA	130,000
14797-65-0	nitrite	1,000	--	--	--	--	--	--	8,000	8,000	--	--	1	NA	8,000
	sulfate	--	--	--	--	--	--	--	--	--	--	--	2.0	2.0	--
7664-41-7	ammonia	--	--	--	--	--	--	--	--	--	--	--	0.5	0.5	--
	TOC	--	--	--	--	--	--	--	--	--	--	--	5	5	--
	pH	6.5 to 8.5	--	--	--	--	--	--	--	--	--	--	1	1	--
CHLORINATED PESTICIDES															
319-84-6	hexachlorocyclohexane;alpha	0.010	1,800	1.8	0.0004	2.0	0.0004	0.16	--	0.0004	--	--	0.005	0.005	0.16
58-89-9	lindane (gamma-BHC)	0.019	1,400	1.4	0.0006	6.8	0.001	--	24	0.001	--	0.010	0.005	0.005	0.010
319-85-7	hexachlorocyclohexane;beta-	0.010	2,100	2.1	0.00003	0.24	0.0005	0.56	--	0.0005	--	--	0.005	0.005	0.56
76-44-8	heptachlor	0.010	9,500	9.5	0.045	0.18	0.002	0.22	40	0.002	--	--	0.005	0.005	0.22
319-86-8	hexachlorocyclohexane;delta-	0.012	--	--	--	--	--	--	--	--	--	--	0.005	0.005	--
309-00-2	aldrin	0.010	49,000	49	0.007	0.18	0.010	0.059	2.4	0.010	--	--	0.005	0.005	0.059
1024-57-3	heptachlor epoxide	0.010	83,000	83	0.0004	0.20	0.017	0.11	1.0	0.017	--	--	0.005	0.005	0.11
57-74-9	chlordane	0.20	51,000	51	0.002	0.056	0.21	2.9	40	0.21	--	--	0.1	0.1	2.9
115-29-7	endosulfan	0.056	2,040	2	0.0005	0.51	0.003	--	480	0.003	--	--	0.005	0.005	0.005 (b)
72-55-9	dde (4,4'-DDE)	0.010	86,000	86	0.0009	0.12	0.017	2.9	--	0.017	--	--	0.005	0.005	2.9
60-57-1	dieldrin	0.010	26,000	26	0.0006	0.20	0.005	0.063	4.0	0.005	--	--	0.005	0.005	0.063
72-20-8	endrin	0.010	11,000	11	0.0003	0.25	0.002	--	24	0.002	--	--	0.005	0.005	24
72-54-8	ddd (4,4'-DDD)	0.010	46,000	46	0.0002	0.090	0.009	4.2	--	0.009	--	--	0.005	0.005	0.009 (b)
50-29-3	ddt (4,4'-DDT)	0.010	680,000	680	0.0003	0.025	0.14	2.9	40	0.14	--	3.0	0.005	0.005	3.0
72-43-5	methoxychlor	0.030	80,000	80	0.0006	0.045	0.048	--	400	0.048	--	--	0.005	0.005	400
8001-35-2	toxaphene	0.50	96,000	96	0.0002	0.74	0.96	0.91	--	0.91	--	--	0.25	0.25	0.91

**TABLE 7
SOIL SCREENING LEVELS
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Groundwater Screening Level (Table 6) (µg/L)	Leaching to GW Model Inputs				Protection of GW (3-Phase Model) mg/kg	SOIL - Direct Contact Pathway (Ingestion Only) Method B: Unrestricted Land Use Standard Formula Values		Method B Preliminary Soil Cleanup Level (mg/kg)	Background Soil Metals Concentrations Statewide (mg/kg) 90 percentile value (a)	Method A Soil Unrestricted Land Use (mg/kg)	ALS Global		Screening Level (mg/kg)
			Koc	Kd	Hcc	S		Carcinogen (mg/kg)	Non-carcinogen (mg/kg)				Reporting Limit (mg/kg)	Quantitation Limit (mg/kg)	
			L/kg @ pH=6.8	L/kg # @ pH 6.8 for metals	unitless	mg/l									
POLYCHLORINATED BIPHENYLS															
12674-11-2	aroclor 1016	0.005	107,000	107	0.017	0.57	0.011	14	5.6	0.011	--	--	0.01	0.01	5.6
11104-28-2	aroclor 1221	--	--	--	--	--	--	--	--	--	--	--	0.02	0.02	--
11141-16-5	aroclor 1232	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01	--
53469-21-9	aroclor 1242	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01	--
12672-29-6	aroclor 1248	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01	--
11097-69-1	aroclor 1254	0.005	98,000	98	0.030	0.052	0.010	0.50	1.6	0.010	--	--	0.01	0.01	0.50
11096-82-5	aroclor 1260	0.014	820,000	820	0	--	0.23	0.50	--	0.23	--	--	0.01	0.01	0.50
	pcb mixtures	0.1	310,000	310	0	--	--	0.50	--	0.50	--	1.0	--	--	1.0
VOLATILE ORGANIC COMPOUNDS															
75-71-8	dichlorodifluoromethane	1,600	58	0.058	4.1	280	20	--	16,000	20	--	--	0.01	0.0011	16,000
74-87-3	chloromethane	--	35	0.035	0.98	8,200	--	--	--	--	--	--	0.01	0.000665	--
75-01-4	vinyl chloride	0.031	19	0.019	1.1	6,800	0.0002	0.67	240	0.0002	--	--	0.01	0.000286	0.0002 (b)
74-83-9	bromomethane (methyl bromide)	11	9.0	0.009	0.26	15,000	0.052	--	110	0.052	--	--	0.01	0.000555	110
75-00-3	chloroethane	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000665	--
56-23-5	carbon tetrachloride	0.23	150	0.15	1.3	790	0.002	14	320	0.002	--	--	0.01	0.000699	14
75-69-4	trichlorofluoromethane	2,400	160	0.16	4.0	1,100	34	--	24,000	34	--	--	0.01	0.000585	24,000
75-15-0	carbon disulfide	800	46	0.046	1.2	1,200	5.7	--	8,000	5.7	--	--	0.01	0.00068	8,000
67-64-1	acetone	7,200	0.58	0.0006	0.002	1,000,000	29	--	72,000	29	--	--	0.05	0.00129	72,000
75-35-4	dichloroethene;1,1-	0.057	65	0.065	1.1	2,300	0.0004	--	4,000	0.0004	--	--	0.01	0.0000297	4,000
75-09-2	methylene chloride (dichloromethane)	4.6	10	0.010	0.090	13,000	0.020	130	4,800	0.020	0.020	--	0.02	0.00138	0.020
107-13-1	acrylonitrile	0.057	0.85	0.0009	0.004	79,000	0.0002	1.9	3,200	0.0002	--	--	0.05	0.000713	1.9
1634-04-4	methyl tert-butyl ether (MTBE)	20	--	--	--	--	--	560	--	560	--	0.10	0.01	0.00069	0.10
156-60-5	dichloroethene;1,2-,trans	100	38	0.038	0.39	6,300	0.54	--	1,600	0.54	--	--	0.01	0.000661	1,600
75-34-3	dichloroethane;1,1-	7.7	53	0.053	0.23	5,060	0.042	180	16,000	0.042	--	--	0.01	0.000669	180
78-93-3	methyl ethyl ketone (2-butanone)	4,800	--	--	--	--	--	--	48,000	48,000	--	--	0.05	0.000979	48,000
156-59-2	dichloroethene;1,2-,cis	16	36	0.036	0.17	3,500	0.080	--	160	0.080	--	--	0.01	0.000721	160
110-54-3	hexane;n-	480	--	--	--	--	--	--	4,800	4,800	--	--	0.20	0.061800	4,800
594-20-7	dichloropropane;2,2-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000684	--
74-97-5	bromochloromethane	--	--	--	--	--	--	--	--	--	--	--	0.01	0.00119	--
67-66-3	chloroform	1.4	53	0.053	0.15	8,000	0.008	32	800	0.008	--	--	0.01	0.000685	0.008 (b)
71-55-6	trichloroethane;1,1,1-	200	140	0.14	0.71	1,330	1.6	--	160,000	1.6	--	2.0	0.01	0.000616	2.0
563-58-6	dichloropropene;1,1-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000616	--
107-06-2	dichloroethane;1,2-	0.38	38	0.038	0.040	8,500	0.002	11	1,600	0.002	--	--	0.01	0.000175	11
71-43-2	benzene	1.2	62	0.062	0.23	1,800	0.007	18	320	0.007	--	0.030	0.005	0.0000222	0.030
79-01-6	trichloroethene (TCE)	2.5	94	0.094	0.42	1,100	0.017	12	41	0.017	--	0.030	0.01	0.0000478	0.030
78-87-5	dichloropropane;1,2-	0.50	47	0.047	0.12	2,800	0.003	28	7,200	0.003	--	--	0.01	0.000619	28
74-95-3	dibromomethane	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000783	--
75-27-4	bromodichloromethane (dichlorobromomethane)	0.080	55	0.055	0.066	6,700	0.0004	16	1,600	0.0004	--	--	0.01	0.000693	16
542-75-6	dichloropropene; 1,3-, trans (1,3-dichloropropene)	0.34	27	0.027	0.73	2800	0.002	10	2,400	0.002	--	--	0.01	0.000735	10
108-10-1	methyl isobutyl ketone (4-methyl-2-pentanone)	640	130	0.13	0.006	19000	4.2	--	6,400	4.2	--	--	0.05	0.000682	6,400
108-88-3	toluene	640	140	0.14	0.27	530	4.7	--	6,400	4.7	--	7.0	0.01	0.000708	7.0
10061-01-5	dichloropropene;1,3-, cis	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000714	--
79-00-5	trichloroethane;1,1,2-	0.59	75	0.075	0.037	4,400	0.003	18	320	0.003	--	--	0.01	0.000737	18
591-78-6	hexanone;2-	--	--	--	--	--	--	--	--	--	--	--	0.05	0.000475	--
142-28-9	dichloropropane;1,3-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000717	--
127-18-4	tetrachloroethene (PCE)	0.69	270	0.27	0.75	200	0.007	480	480	0.007	--	0.050	0.01	0.0000458	0.050
124-48-1	dibromochloromethane (chlorodibromomethane)	0.40	470	0.47	0.035	4,400	0.005	12	1,600	0.005	--	--	0.01	0.00106	12
106-93-4	dibromoethane; 1,2- (EDB)	0.010	66	0.066	0.018	4,200	0.0001	0.50	--	0.0001	--	0.005	0.005	0.000023	0.005
108-90-7	chlorobenzene	100	220	0.22	0.15	470	0.87	--	1,600	0.87	--	--	0.01	0.000737	1,600
630-20-6	tetrachloroethane;1,1,1,2-	1.7	93	0.093	0.014	3,000	0.010	38	2,400	0.010	--	--	0.01	0.000573	38
100-41-4	ethylbenzene	70	204	0.20	0.32	170	0.60	--	8,000	0.60	--	6.0	0.01	0.000723	6.0
108-38-3	xylene;m-	1,600	200	0.20	0.30	160	14	--	16,000	14	--	--	0.02	0.0013	16,000
106-42-3	xylene;p-	1,600	310	0.31	0.31	190	17	--	16,000	17	--	--	0.02	0.0013	16,000
100-42-5	styrene	100	910	0.91	0.11	310	2.2	--	16,000	2.2	--	--	0.01	0.000558	16,000
95-47-6	xylene;o-	1,600	240	0.24	0.21	180	15	--	16,000	15	--	--	0.01	0.000623	16,000
1330-20-7	xylene	1,000	230	0.23	0.28	170	9.1	--	16,000	9.1	--	9.0	0.01	0.000623	9.0
75-25-2	bromoform	4.3	130	0.13	0.022	3,100	0.028	130	1,600	0.028	--	--	0.01	0.000793	130
98-82-8	cumene (isopropylbenzene)	800	220	0.22	0.47	61	7.4	--	8,000	7.4	--	--	0.01	0.000605	8,000
79-34-5	tetrachloroethane;1,1,2,2-	0.17	79	0.079	0.014	3,000	0.001	5.0	1,600	0.001	--	--	0.01	0.000763	5.0

**TABLE 7
SOIL SCREENING LEVELS
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Groundwater Screening Level (Table 6) (µg/L)	Leaching to GW Model Inputs				Protection of GW (3-Phase Model) mg/kg	SOIL - Direct Contact Pathway (Ingestion Only) Method B: Unrestricted Land Use Standard Formula Values		Method B Preliminary Soil Cleanup Level (mg/kg)	Background Soil Metals Concentrations Statewide (mg/kg) 90 percentile value (a)	Method A Soil Unrestricted Land Use (mg/kg)	ALS Global		Screening Level (mg/kg)
			Koc	Kd	Hcc	S		Carcinogen (mg/kg)	Non-carcinogen (mg/kg)				Reporting Limit (mg/kg)	Quantitation Limit (mg/kg)	
			L/kg @ pH=6.8	L/kg # @ pH 6.8 for metals	unitless	mg/l									
96-18-4	trichloropropane;1,2,3-	0.023	51	0.051	1.1	2,700	0.0002	0.033	320	0.0002	--	--	0.01	0.000803	0.033
108-86-1	bromobenzene	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000767	--
103-65-1	propylbenzene; n-	800	--	--	--	--	--	--	8,000	8,000	--	--	0.01	0.000737	8,000
95-49-8	chlorotoluene, 2-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000766	--
108-67-8	trimethylbenzene; 1,3,5-	80	--	--	--	--	--	--	800	800	--	--	0.01	0.000552	800
106-43-4	chlorotoluene, 4-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.0011	--
98-06-6	butylbenzene; tert-	800	--	--	--	--	--	--	8,000	8,000	--	--	0.01	0.000711	8,000
95-63-6	trimethylbenzene; 1,2,4-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000596	--
135-98-8	butylbenzene; sec-	800	--	--	--	--	--	--	8,000	8,000	--	--	0.01	0.000649	8,000
99-87-6	isopropyltoluene, p-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000531	--
541-73-1	dichlorobenzene;1,3-	320	--	--	--	--	--	--	--	--	--	--	0.01	0.000778	--
106-46-7	dichlorobenzene;1,4-	8.1	620	0.62	0.10	74	0.13	190	5,600	0.13	--	--	0.01	0.000721	190
104-51-8	butylbenzene, n-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.001	--
95-50-1	dichlorobenzene;1,2-	420	380	0.38	0.078	160	4.9	--	7,200	4.9	--	--	0.01	0.000776	7,200
96-12-8	dibromo-3-chloropropane;1,2-	0.0997	28	0.028	0.006	1,200	0.0005	1.3	16	0.0005	--	--	0.05	0.000912	1.3
120-82-1	trichlorobenzene;1,2,4-	1.5	1,700	1.7	0.058	300	0.056	35	800	0.056	--	--	0.01	0.000676	0.056 (b)
87-68-3	hexachlorobutadiene	0.44	54,000	54	0.33	3.2	0.47	13	80	0.47	--	--	0.01	0.000802	13
87-61-6	trichlorobenzene;1,2,3-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000723	--
SEMIVOLATILE ORGANIC COMPOUNDS															
110-86-1	pyridine	8.0	4.7	0.005	0.28	300	0.037	--	80	0.037	--	--	0.1	0.0549	80
62-75-9	nitrosodimethylamine;N-	1.51	--	--	--	--	--	0.020	0.64	0.020	--	--	0.1	0.0334	0.020
108-95-2	phenol	2,400	29	0.029	0.00002	83,000	11	--	24,000	11	--	--	0.1	0.0495	24,000
62-53-3	aniline	7.7	8.2	0.008	0.00009	36,000	0.032	180	560	0.032	--	--	0.1	0.0576	180
111-44-4	bis(2-chloroethyl)ether	0.94	76	0.076	0.0007	17,000	0.005	0.91	--	0.005	--	--	0.25	0.12	0.91
95-57-8	chlorophenol;2-	40	390	0.39	0.016	22,000	0.47	--	400	0.47	--	--	0.25	0.122	400
100-51-6	benzyl alcohol	800	10	0.010	0.00002	40,000	3.4	--	8,000	3.4	--	--	0.1	0.0636	8,000
95-48-7	cresol;o- (2-methylphenol)	400	91	0.091	0.00005	26,000	2.3	--	4,000	2.3	--	--	0.1	0.0422	4,000
39638-32-9	bis(2-chloroisopropyl) ether	1,400	61	0.061	0.005	1,700	--	--	--	--	--	--	0.25	0.157	--
	cresol; m- & p- (3&4-Methylphenol) (c)	400	48	0.048	0.00004	23,000	2.0	--	4,000	2.0	--	--	0.1	0.0531	2.0 (b)
621-64-7	nitroso-di-n-propylamine;N-	2.0	24	0.024	0.00009	9,900	0.009	0.14	--	0.009	--	--	0.25	0.116	0.14
67-72-1	hexachloroethane	2.0	1,800	1.8	0.16	50	0.080	25	56	0.080	--	--	0.1	0.0254	25
98-95-3	nitrobenzene	16	120	0.12	0.001	2,900	0.10	--	160	0.10	--	--	0.1	0.0242	160
78-59-1	isophorone	8.4	47	0.047	0.0003	12,000	0.041	1,050	16,000	0.041	--	--	0.1	0.0875	1,050
88-75-5	nitrophenol, 2-	--	--	--	--	--	--	--	--	--	--	--	0.1	0.0385	--
105-67-9	dimethylphenol;2,4-	160	--	--	--	--	--	--	1,600	1,600	--	--	0.1	0.0798	1,600
65-85-0	benzoic acid	64,000	0.60	0.0006	0.00006	3,500	257	--	320,000	257	--	--	1	0.888	320,000
111-91-1	bis(2-chloroethoxy)methane	--	--	--	--	--	--	--	--	--	--	--	0.25	0.15	--
120-83-2	dichlorophenol;2,4-	24	150	0.15	0.0001	4,500	0.17	--	240	0.17	--	--	0.5	0.306	240
106-47-8	chloroaniline;p- (4-chloroaniline)	1.89	66	0.066	0.00001	5,300	0.010	5.0	320	0.010	--	--	1	0.705	5.0
87-65-0	dichlorophenol;2,6-	--	--	--	--	--	--	--	--	--	--	--	0.25	0.229	--
59-50-7	methylphenol; 4-chloro-3-	--	--	--	--	--	--	--	--	--	--	--	0.5	0.402	--
77-47-4	hexachlorocyclopentadiene	40	200,000	200	1.1	1.8	160	--	480	160	--	--	0.1	0.0308	480
88-06-2	trichlorophenol;2,4,6-	1.4	380	0.38	0.0003	0	0.016	91	80	0.016	--	--	0.1	0.0494	80
95-95-4	trichlorophenol;2,4,5-	800	1,600	1.6	0.0002	29	29	--	8,000	29	--	--	0.1	0.049	8,000
91-58-7	chloronaphthalene, 2-	--	--	--	--	--	--	--	--	--	--	--	0.1	0.0395	--
88-74-4	nitroaniline, 2-	160	39	0.039	0.00005	1,300	0.77	--	800	0.77	--	--	0.1	0.0235	800
131-11-3	dimethyl phthalate	270,000	31	0.031	0.000004	4,200	--	--	--	--	--	--	0.1	0.0526	--
606-20-2	dinitrotoluene;2,6-	1.82	69	0.069	0.00003	180	0.010	0.67	80	0.010	--	--	0.1	0.0462	0.67
99-09-2	nitroaniline, 3-	--	--	--	--	--	--	--	--	--	--	--	1	0.722	--
51-28-5	dinitrophenol;2,4-	32	0.010	0.00001	0.00002	2,800	0.13	--	160	0.13	--	--	0.1	0.0657	160
100-02-7	nitrophenol, 4-	--	--	--	--	--	--	--	--	--	--	--	0.1	0.0678	--
132-64-9	dibenzofuran	16	--	--	--	--	--	--	80	80	--	--	0.1	0.0402	80
121-14-2	dinitrotoluene;2,4-	0.78	96	0.096	0.000004	270	0.005	3.2	160	0.005	--	--	0.1	0.0268	3.2
58-90-2	tetrachlorophenol;2,3,4,6-	480	--	--	0.0006	100	--	--	2,400	2,400	--	--	0.1	0.062	2,400
84-66-2	diethyl phthalate	13,000	82	0.082	0.00002	1,080	73	--	64,000	73	--	--	0.1	0.0524	64,000
7005-72-3	phenylether; 4-chlorophenyl-	--	--	--	--	--	--	--	--	--	--	--	0.1	0.0516	--
100-01-6	nitroaniline, 4-	--	--	--	--	--	--	--	--	--	--	--	0.25	0.158	--
534-52-1	methylphenol; 4,6-dinitro-2-	--	--	--	--	--	--	--	--	--	--	--	0.1	0.0354	--
86-30-6	nitrosodiphenylamine;N-	3.3	1,300	1.3	0.0002	35	0.10	200	--	0.10	--	--	0.1	0.0424	0.10 (b)
103-33-3	azobenzene	1.63	--	--	--	--	--	9.1	--	9.1	--	--	0.1	0.0548	9.1

**TABLE 7
SOIL SCREENING LEVELS
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Groundwater Screening Level (Table 6) (µg/L)	Leaching to GW Model Inputs				Protection of GW (3-Phase Model) mg/kg	SOIL - Direct Contact Pathway (Ingestion Only) Method B: Unrestricted Land Use Standard Formula Values		Method B Preliminary Soil Cleanup Level (mg/kg)	Background Soil Metals Concentrations Statewide (mg/kg) 90 percentile value (a)	Method A Soil Unrestricted Land Use (mg/kg)	ALS Global		Screening Level (mg/kg)
			Koc	Kd	Hcc	S		Carcinogen (mg/kg)	Non-carcinogen (mg/kg)				Reporting Limit (mg/kg)	Quantitation Limit (mg/kg)	
			L/kg @ pH=6.8	L/kg # @ pH 6.8 for metals	unitless	mg/l									
101-55-3	phenylether; 4-bromophenyl-	--	--	--	--	--	--	--	--	--	--	0.1	0.0453	--	
118-74-1	hexachlorobenzene	0.01	80,000	80	0.054	6.2	0.016	0.63	64	0.016	--	--	0.1	0.0448	0.63
86-74-8	carbazole	--	3,400	3.4	0.000006	7.5	--	--	--	--	--	--	0.25	0.134	--
84-74-2	di-butyl phthalate (di-n-butyl phthalate)	1,600	1,600	1.6	0.0000004	11	57	--	8,000	57	--	--	0.1	0.0422	8,000
85-68-7	butyl benzyl phthalate	8.3	14,000	14	0.00005	2.7	2.3	530	16,000	2.3	--	--	0.1	0.028	530
91-94-1	dichlorobenzidine;3,3'-	2.0	720	0.72	0.000002	3.1	0.037	2.2	--	0.037	--	--	0.25	0.213	0.213 (b)
117-81-7	bis(2-ethylhexyl) phthalate	1.2	110,000	110	0.000004	0.34	2.6	71	1,600	2.6	--	--	0.1	0.0274	2.6 (b)
117-84-0	di-n-octyl phthalate	160	83,000,000	83,000	0.003	0.020	265,601	--	800	800	--	--	0.1	0.0271	800
91-20-3	naphthalene	160	1,200	1.2	0.020	31	4.5	--	1,600	4.5	--	5.0	0.02	0.00319	5.0
91-57-6	methyl naphthalene, 2-	32	--	--	--	--	--	--	320	320	--	--	0.02	0.00388	320
90-12-0	methyl naphthalene, 1-	1.5	--	--	--	--	--	35	--	35	--	--	0.02	0.00319	35
208-96-8	acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	0.02	0.00284	--
83-32-9	acenaphthene	650	4,900	4.9	0.006	4.2	66	--	4,800	66	--	--	0.02	0.00264	66 (b)
86-73-7	fluorene	640	7,700	7.7	0.003	2.0	101	--	3,200	101	--	--	0.02	0.00385	101 (b)
87-86-5	pentachlorophenol	0.23	600	0.59	0.000001	2,000	0.004	2.5	400	0.004	--	--	0.1	0.0769	0.0769 (b)
85-01-8	phenanthrene	--	--	--	--	--	--	--	--	--	--	--	0.02	0.00509	--
120-12-7	anthracene	4,800	23,000	23	0.003	0.043	2,275	--	24,000	2,275	--	--	0.02	0.00434	2,275 (b)
206-44-0	fluoranthene	86	49,000	49	0.0007	0.21	85	--	3,200	85	--	--	0.02	0.00413	85 (b)
129-00-0	pyrene	480	68,000	68	0.0005	0.14	655	--	2,400	655	--	--	0.02	0.00446	655 (b)
56-55-3	benzo[a]anthracene	0.009	360,000	360	0.0001	0.009	0.068	1.4	--	0.068	--	--	0.02	0.00329	1.4
218-01-9	chrysene	0.01	400,000	400	0.004	0.002	0.1	140	--	0.1	--	--	0.02	0.00448	140
205-99-2	benzo[b]fluoranthene	0.007	1,200,000	1,200	0.005	0.002	0.18	1.4	--	0.18	--	--	0.02	0.00437	0.18 (b)
207-08-9	benzo[k]fluoranthene	0.024	1,200,000	1,200	0.00003	0.0008	0.57	14	--	0.57	--	--	0.02	0.00362	0.57 (b)
50-32-8	benzo[a]pyrene	0.0104	970,000	970	0.00005	0.002	0.20	0.14	--	0.14	0.10	--	0.02	0.00355	0.10
193-39-5	indeno[1,2,3-cd]pyrene	0.016	3,500,000	3,500	0.00007	0.00002	1.1	1.4	--	1.1	--	--	0.02	0.00422	1.4
53-70-3	dibenzo[a,h]anthracene	0.0127	1,800,000	1,800	0.000006	0.002	0.46	0.14	--	0.14	--	--	0.02	0.00499	0.14
191-24-2	benzo[g,h,i]perylene	--	--	--	--	--	--	--	--	--	--	--	0.02	0.00563	--
	cPAH TEQ	0.10	--	--	--	--	--	--	--	--	0.10	--	--	--	0.10

BHC = benzene hexachloride
 BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
 CAS = Chemical Abstracts Service
 DDD = dichlorodiphenyldichloroethane
 DDE = dichlorodiphenyldichloroethylene
 DDT = dichlorodiphenyltrichloroethane

mg/kg = milligram per kilogram
 PAH = Polycyclic Aromatic Hydrocarbon
 PCB = Polychlorinated biphenyl
 SEMI = Semivolatile
 TPH = Total Petroleum Hydrocarbon
 VOL = Volatile

-- = Not Available

- (a) PTI. 1989. Background Concentrations of Selected Chemicals in Water, Soil, Sediments, and Air of Washington State, Draft Report. April.
- (b) PSL reflects consideration of protection of groundwater criteria based on RI groundwater sample analytical results.
- (c) Screening level for m- & p-cresol based on criteria for m-cresol (3-methylphenol), as it is more conservative than the criteria for p-cresol (4-methylphenol).

TABLE 8
SOIL ANALYTICAL RESULTS
CLOSED CITY OF YAKIMA LANDFILL SITE

Location: Depth: Laboratory ID: Sample Date:	Screening Levels	MW-100 (13.5-14) EV14090067-02 9/11/2014	MW-101 (17.5-18.5) EV14090040-04 9/5/2014	MW-102 (4-5) EV14090051-01 9/8/2014	MW-102 (15-15.5) EV14090051-02 9/8/2014	MW-103 (20.5-21.5) EV14090040-03 9/5/2014	MW-104 (2.5-3) EV14090022-03 9/3/2014	MW-104 (19-20) EV14090022-04 9/3/2014	MW-105 (2.5-3.5) EV14090022-01 9/2/2014	MW-105 (17.5-19) EV14090022-02 9/2/2014	MW-106 (2.5-3.5) EV14090051-05 9/9/2014	MW-106 (13.5-14.5) EV14090067-01 9/10/2014	MW-107 (2.5-3.5) EV14090051-03 9/9/2014	MW-107 (16-17) EV14090051-04 9/9/2014
TOTAL PETROLEUM HYDROCARBONS (mg/kg)														
HCID														
Gas Range	--	20 U	20 U	20 U	25 U	20 U	20 U	20 U	20 U	20 U	>20	20 U	20 U	20 U
Diesel Range	--	50 U	50 U	50 U	61 U	50 U	50 U	50 U	50 U	50 U	>50	50 U	50 U	50 U
Oil Range	--	100 U	100 U	>100	120 U	100 U	>100	100 U	>100	100 U	>100	100 U	>100	100 U
NWTPH-Gx														
Gasoline Range	30/100 (a)	NA	NA	NA	NA	NA	NA	NA	NA	NA	35	NA	NA	NA
NWTPH-Dx														
Diesel Range (w/SGC)	2,000	NA	NA	25 U	NA	NA	25 U	NA	25 U	NA	87 J	NA	250	NA
Diesel Range (wo/SGC)	2,000	NA	NA	25 U	NA	NA	46 U	NA	25 U	NA	150 J	NA	300	NA
Oil Range (w/SGC)	2,000	NA	NA	260	NA	NA	300	NA	380	NA	380	NA	820	NA
Oil Range (wo/SGC)	2,000	NA	NA	330	NA	NA	450	NA	510	NA	560	NA	990	NA
TOTAL METALS (mg/kg)														
Methods EPA-6020/EPA-7471														
Arsenic	20	1.4	1.4	1.9	2.2	1.8	2.2	1.5	3.6	2.7	2.6	2.1	1.7	2.6
Barium	824	58	70	82	84	56	91	76	140	79	100	94	88	190
Cadmium	2.0	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.25 U	0.26 U	1.3	0.27 U	0.50 U	1.1	0.50 U	0.50 U
Chromium	2,000	23	14	7.9	15	14	12	19	24	18	13	16	8.9	21
Chromium (VI) (EPA-7196)	19	5.0 U	5.0 U	NA	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U
Iron	151	25,000	22,000	17,000	24,000	23,000	20,000	22,000	35,000	21,000	25,000	24,000	27,000	40,000
Lead	250	2.9	3.7	39	6.0	3.1	56	3.3	190	4.7	51	11	68	9.6
Manganese	11,000	380	240	200	250	250	330	240	330	350	520	210	470	320
Selenium	400	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Silver	400	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	3.5	0.26 U	0.28 U	0.27 U	0.50 U	0.50 U	0.50 U	0.50 U
Sodium	--	750	380	340	440	530	540	540	490	1200	560	490	520	1200
Mercury	2.0	0.020 U	0.036	0.060	0.049	0.028	0.090	0.23	0.18	0.023	0.11	0.035	0.038	0.073
CONVENTIONALS (mg/kg)														
Fluoride (EPA-300.0M)	3,200	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7	1.6 U	3.3	1.6 U	2.0	1.6 U
Nitrate as N (EPA-300.0M)	130,000	0.87	0.50 UJ	0.50 UJ	0.50 UJ	0.5 UJ	0.50 UJ	0.91 J	63 J	0.50 UJ	15 J	26	0.50 UJ	0.50 UJ
Nitrite as N (EPA-300.0M)	8,000	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.5 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	1.7 J	0.50 U	0.50 UJ	0.50 UJ
pH (lab)	--	8.62	6.71	NA	7.43	7.53	NA	7.51	NA	7.87	NA	7.17	NA	7.23
PESTICIDES (mg/kg)														
Method EPA-8081														
A-BHC	0.16	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
G-BHC (Lindane)	0.01	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
B-BHC	0.56	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
Heptachlor	0.22	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
D-BHC	--	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
Aldrin	0.059	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
Heptachlor Epoxide	0.11	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
Chlordane	2.9	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
Endosulfan I (b)	0.003	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
4,4'-DDE	2.9	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
Dieldrin	0.063	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
Endrin (c)	24	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
4,4'-DDD	0.009	0.0026 U	0.0029 U	NA	0.0031 U	0.012	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
Endosulfan II (b)	0.003	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
4,4'-DDT	3.0	0.0026 U	0.0029 U	NA	0.0031 U	0.0069	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
Endrin Aldehyde (c)	24	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
Endosulfan Sulfate (b)	0.003	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
Methoxychlor	400	0.0026 U	0.0029 U	NA	0.0031 U	0.0028 U	NA	0.0031 U	NA	0.0029 U	NA	0.0032 U	NA	0.0036 U
Hexachlorobenzene	630	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	0.91	0.13 U	0.15 U	NA	0.16 U	0.14 U	NA	0.16 U	NA	0.15 U	NA	0.16 U	NA	0.18 U

TABLE 8
SOIL ANALYTICAL RESULTS
CLOSED CITY OF YAKIMA LANDFILL SITE

Location: Depth: Laboratory ID: Sample Date:	Screening Levels	MW-100 (13.5-14) EV14090067-02 9/11/2014	MW-101 (17.5-18.5) EV14090040-04 9/5/2014	MW-102 (4-5) EV14090051-01 9/8/2014	MW-102 (15-15.5) EV14090051-02 9/8/2014	MW-103 (20.5-21.5) EV14090040-03 9/5/2014	MW-104 (2.5-3) EV14090022-03 9/3/2014	MW-104 (19-20) EV14090022-04 9/3/2014	MW-105 (2.5-3.5) EV14090022-01 9/2/2014	MW-105 (17.5-19) EV14090022-02 9/2/2014	MW-106 (2.5-3.5) EV14090051-05 9/9/2014	MW-106 (13.5-14.5) EV14090067-01 9/10/2014	MW-107 (2.5-3.5) EV14090051-03 9/9/2014	MW-107 (16-17) EV14090051-04 9/9/2014
PCBs (mg/kg)														
Method EPA-8082														
PCB-1016	5.6	0.0052 U	0.0059 U	NA	0.0061 U	0.0056 U	NA	0.0061 U	NA	0.0057 U	NA	0.0064 U	NA	0.0074 U
PCB-1221	--	0.011 U	0.012 U	NA	0.013 U	0.012 U	NA	0.013 U	NA	0.012 U	NA	0.013 U	NA	0.015 U
PCB-1232	--	0.0052 U	0.0059 U	NA	0.0061 U	0.0056 U	NA	0.0061 U	NA	0.0057 U	NA	0.0064 U	NA	0.0074 U
PCB-1242	--	0.0052 U	0.0059 U	NA	0.0061 U	0.0056 U	NA	0.0061 U	NA	0.0059	NA	0.028	NA	0.0074 U
PCB-1248	--	0.0052 U	0.0059 U	NA	0.0061 U	0.0056 U	NA	0.0061 U	NA	0.0057 U	NA	0.0064 U	NA	0.0074 U
PCB-1254	0.50	0.0052 U	0.0059 U	NA	0.0061 U	0.0056 U	NA	0.0061 U	NA	0.0057 U	NA	0.0064 U	NA	0.0074 U
PCB-1260	0.50	0.0052 U	0.0059 U	NA	0.0061 U	0.0056 U	NA	0.0061 U	NA	0.0057 U	NA	0.0064 U	NA	0.0074 U
Total PCBs	1.0	ND	ND	ND	ND	ND	ND	ND	ND	0.0059	ND	0.028	ND	ND
VOCs (µg/kg)														
Method EPA-8260														
Dichlorodifluoromethane	16,000,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Chloromethane	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Vinyl Chloride	0.2	0.033 U	0.042 U	NA	0.037 U	0.033 U	NA	0.035 U	NA	0.034 U	NA	0.034 U	NA	0.051 U
Bromomethane	110,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Chloroethane	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Carbon Tetrachloride	14,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Trichlorofluoromethane	24,000,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Carbon Disulfide	8,000,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Acetone	72,000,000	50 U	50 U	NA	50 U	50 U	NA	50 U	NA	50 U	NA	50 U	NA	50 U
1,1-Dichloroethene	4,000,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Methylene Chloride	20	20 U	20 U	NA	20 U	20 U	NA	20 U	NA	20 U	NA	20 U	NA	20 U
Acrylonitrile	1,900	50 U	50 U	NA	50 U	50 U	NA	50 U	NA	50 U	NA	50 U	NA	50 U
Methyl T-Butyl Ether (MTBE)	100	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Trans-1,2-Dichloroethene	1,600,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,1-Dichloroethane	180,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
2-Butanone (MEK)	48,000,000	50 U	50 U	NA	50 U	50 U	NA	50 U	NA	50 U	NA	50 U	NA	50 U
Cis-1,2-Dichloroethene	160,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
2,2-Dichloropropane	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Bromochloromethane	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Chloroform	8	8.0 U	8.0 U	NA	8.0 U	8.0 U	NA	8.0 U	NA	8.0 U	NA	8.0 U	NA	8.0 U
1,1,1-Trichloroethane	2,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,1-Dichloropropene	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,2-Dichloroethane	11,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Benzene	30	5.0 U	5.0 U	NA	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U
Trichloroethene	30	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,2-Dichloropropane	28,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Dibromomethane	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Bromodichloromethane	16,000	0.81 U	1.0 U	NA	0.91 U	0.79 U	NA	0.84 U	NA	0.82 U	NA	0.84 U	NA	1.2 U
Trans-1,3-Dichloropropene	10,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
4-Methyl-2-Pentanone (MIBK)	6,400,000	50 U	50 U	NA	50 U	50 U	NA	50 U	NA	50 U	NA	50 U	NA	50 U
Toluene	7,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Cis-1,3-Dichloropropene	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,1,2-Trichloroethane	18,000	0.86 U	1.1 U	NA	0.96 U	0.84 U	NA	0.90 U	NA	0.87 U	NA	0.89 U	NA	1.3 U
2-Hexanone	--	50 U	50 U	NA	50 U	50 U	NA	50 U	NA	50 U	NA	50 U	NA	50 U
1,3-Dichloropropane	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Tetrachloroethene (PCE)	50	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Dibromochloromethane	12,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,2-Dibromoethane (EDB)	5.0	5.0 U	5.0 U	NA	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U
Chlorobenzene	1,600,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,1,1,2-Tetrachloroethane	38,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Ethylbenzene	6,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
m,p-Xylene (d)	16,000,000	20 U	20 U	NA	20 U	20 U	NA	20 U	NA	20 U	NA	20 U	NA	20 U
Styrene	16,000,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
o-Xylene	16,000,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Bromoform	130,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U

TABLE 8
SOIL ANALYTICAL RESULTS
CLOSED CITY OF YAKIMA LANDFILL SITE

Location: Depth: Laboratory ID: Sample Date:	Screening Levels	MW-100 (13.5-14) EV14090067-02 9/11/2014	MW-101 (17.5-18.5) EV14090040-04 9/5/2014	MW-102 (4-5) EV14090051-01 9/8/2014	MW-102 (13-15.5) EV14090051-02 9/8/2014	MW-103 (20.5-21.5) EV14090040-03 9/5/2014	MW-104 (2.5-3) EV14090022-03 9/3/2014	MW-104 (19-20) EV14090022-04 9/3/2014	MW-105 (2.5-3.5) EV14090022-01 9/2/2014	MW-105 (17.5-19) EV14090022-02 9/2/2014	MW-106 (2.5-3.5) EV14090051-05 9/9/2014	MW-106 (13.5-14.5) EV14090067-01 9/10/2014	MW-107 (2.5-3.5) EV14090051-03 9/9/2014	MW-107 (16-17) EV14090051-04 9/9/2014
Isopropylbenzene (cumene)	8,000,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,1,2,2-Tetrachloroethane	5,000	0.89 U	1.1 U	NA	1.0 U	0.87 U	NA	0.93 U	NA	0.91 U	NA	0.92 U	NA	1.4 U
1,2,3-Trichloropropane	33	0.94 U	1.2 U	NA	1.0 U	0.92 U	NA	0.98 U	NA	0.95 U	NA	0.97 U	NA	1.4 U
Bromobenzene	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
N-Propyl Benzene	8,000,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
2-Chlorotoluene	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,3,5-Trimethylbenzene	800,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
4-Chlorotoluene	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
T-Butyl Benzene	8,000,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,2,4-Trimethylbenzene	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
S-Butyl Benzene	8,000,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
P-Isopropyltoluene	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,3-Dichlorobenzene	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,4-Dichlorobenzene	190,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
N-Butylbenzene	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,2-Dichlorobenzene	7,200,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,2-Dibromo 3-Chloropropane	1,300	50 U	50 U	NA	50 U	50 U	NA	50 U	NA	50 U	NA	50 U	NA	50 U
1,2,4-Trichlorobenzene	56	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Hexachlorobutadiene	13,000	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
1,2,3-Trichlorobenzene	--	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
SVOCs (µg/kg)														
Method EPA-8270														
Pyridine	80,000	200 U	200 U	NA	200 U	200 U	NA	200 U	NA	200 U	NA	200 U	NA	200 U
N-Nitrosodimethylamine	20	26 U	25 U	NA	29 U	23 U	NA	29 U	NA	31 U	NA	29 U	NA	35 U
Phenol	24,000,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
Aniline	180,000	45 U	42 U	NA	51 U	40 U	NA	50 U	NA	53 U	NA	50 U	NA	61 U
Bis(2-Chloroethyl)Ether	910	93 U	89 U	NA	110 U	83 U	NA	100 U	NA	110 U	NA	100 U	NA	130 U
2-Chlorophenol	400,000	250 U	250 U	NA	250 U	250 U	NA	250 U	NA	250 U	NA	250 U	NA	250 U
Benzyl Alcohol	8,000,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
2-Methylphenol	4,000,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
Bis(2-Chloroisopropyl)Ether	--	250 U	250 U	NA	250 U	250 U	NA	250 U	NA	250 U	NA	250 U	NA	250 U
3&4-Methylphenol	2,000	100 U	400	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
N-Nitroso-Di-N-Propylamine	140	90 U	86 U	NA	100 U	80 U	NA	100 U	NA	110 U	NA	100 U	NA	120 U
Hexachloroethane	25,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
Nitrobenzene	160,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
Isophorone	1,050,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
2-Nitrophenol	--	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
2,4-Dimethylphenol	1,600,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
Benzoic Acid	320,000,000	1000 U	1000 U	NA	1000 U	1000 U	NA	1000 U	NA	1000 U	NA	1000 U	NA	1000 U
Bis(2-Chloroethoxy)Methane	--	250 U	250 U	NA	250 U	250 U	NA	250 U	NA	250 U	NA	250 U	NA	250 U
2,4-Dichlorophenol	240,000	240 U	230 U	NA	270 U	210 U	NA	270 U	NA	280 U	NA	260 U	NA	320 U
4-Chloroaniline	5,000	1000 U	1000 U	NA	1000 U	1000 U	NA	1000 U	NA	1000 U	NA	1000 U	NA	1000 U
2,6-Dichlorophenol	--	250 U	250 U	NA	250 U	250 U	NA	250 U	NA	250 U	NA	250 U	NA	250 U
4-Chloro-3-Methylphenol	--	500 U	500 U	NA	500 U	500 U	NA	500 U	NA	500 U	NA	500 U	NA	500 U
Hexachlorocyclopentadiene	480,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
2,4,6-Trichlorophenol	80,000	38 U	36 U	NA	43 U	34 U	NA	43 U	NA	46 U	NA	43 U	NA	52 U
2,4,5-Trichlorophenol	8,000,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
2-Chloronaphthalene	--	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
2-Nitroaniline	800,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
Dimethylphthalate	--	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
2,6-Dinitrotoluene	670	36 U	34 U	NA	41 U	32 U	NA	40 U	NA	43 U	NA	40 U	NA	49 U
3-Nitroaniline	--	1000 U	1000 U	NA	1000 U	1000 U	NA	1000 U	NA	1000 U	NA	1000 U	NA	1000 U
2,4-Dinitrophenol	160,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
4-Nitrophenol	--	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
Dibenzofuran	80,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
2,4-Dinitrotoluene	3,200	21 U	20 U	NA	24 U	19 U	NA	23 U	NA	25 U	NA	23 U	NA	28 U
2,3,4,6-Tetrachlorophenol	2,400,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
Diethylphthalate	64,000,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U

TABLE 8
SOIL ANALYTICAL RESULTS
CLOSED CITY OF YAKIMA LANDFILL SITE

Location: Depth: Laboratory ID: Sample Date:	Screening Levels	MW-100 (13.5-14) EV14090067-02 9/11/2014	MW-101 (17.5-18.5) EV14090040-04 9/5/2014	MW-102 (4-5) EV14090051-01 9/8/2014	MW-102 (15-15.5) EV14090051-02 9/8/2014	MW-103 (20.5-21.5) EV14090040-03 9/5/2014	MW-104 (2.5-3) EV14090022-03 9/3/2014	MW-104 (19-20) EV14090022-04 9/3/2014	MW-105 (2.5-3.5) EV14090022-01 9/2/2014	MW-105 (17.5-19) EV14090022-02 9/2/2014	MW-106 (2.5-3.5) EV14090051-05 9/9/2014	MW-106 (13.5-14.5) EV14090067-01 9/10/2014	MW-107 (2.5-3.5) EV14090051-03 9/9/2014	MW-107 (16-17) EV14090051-04 9/9/2014
4-Chlorophenyl-Phenylether	--	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
4-Nitroaniline	--	250 U	250 U	NA	250 U	250 U	NA	250 U	NA	250 U	NA	250 U	NA	250 U
4,6-Dinitro-2-Methylphenol	--	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
N-Nitrosodiphenylamine	100	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	110	NA	100 U
Azobenzene	9,100	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
4-Bromophenyl-Phenylether	--	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
Hexachlorobenzene	630	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
Carbazole	--	250 U	250 U	NA	250 U	250 U	NA	250 U	NA	250 U	NA	250 U	NA	250 U
Di-N-Butylphthalate	8,000,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
Butylbenzylphthalate	530,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
3,3'-Dichlorobenzidine	213	170 U	160 U	NA	190 U	150 U	NA	180 U	NA	200 U	NA	180 U	NA	230 U
Bis(2-Ethylhexyl)Phthalate	2,600	110	140	NA	110	100 U	NA	120	NA	100 U	NA	820	NA	540
Di-N-Octylphthalate	800,000	100 U	100 U	NA	100 U	100 U	NA	100 U	NA	100 U	NA	100 U	NA	100 U
PAHs (µg/kg)														
Method EPA-8270 SIM														
Naphthalene	5,000	20 U	20 U	36	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2-Methylnaphthalene	320,000	20 U	20 U	26	20 U	20 U	20 U	20 U	20 U	20 U	20 U	95	20 U	20 U
1-Methylnaphthalene	35,000	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	61	20 U	20 U
Acenaphthylene	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Acenaphthene	66,000	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Fluorene	101,000	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Pentachlorophenol	76.9	48 U	58 U	54 U	61 U	61 U	63 U	62 U	69 U	59 U	53 U	55 U	57 U	76 U
Phenanthrene	--	20 U	20 U	23	20 U	20 U	28	20 U	78	20 U	21	29	20 U	20 U
Anthracene	2,275,000	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Fluoranthene	85,000	20 U	20 U	31	20 U	20 U	170	20 U	240	20 U	20 U	28	20 U	20 U
Pyrene	655,000	20 U	20 U	33	20 U	20 U	45	20 U	120	20 U	20 U	24	20 U	20 U
Benzo[a]Anthracene	1,400	20 U	20 U	20 U	20 U	20 U	21	20 U	99	20 U	20 U	20 U	20 U	20 U
Chrysene	140,000	20 U	20 U	20 U	20 U	20 U	20 U	20 U	63	20 U	20 U	20 U	20 U	20 U
Benzo[b]Fluoranthene	180	20 U	20 U	20 U	20 U	20 U	30	20 U	110	20 U	21	20 U	20 U	20 U
Benzo[k]Fluoranthene	570	20 U	20 U	20 U	20 U	20 U	20 U	20 U	31	20 U	20 U	20 U	20 U	20 U
Benzo[a]Pyrene	100	20 U	20 U	20 U	20 U	20 U	22	20 U	71	20 U	20 U	20 U	20 U	20 U
Indeno[1,2,3-cd]Pyrene	1,400	20 U	20 U	20 U	20 U	20 U	20 U	20 U	38	20 U	20 U	20 U	20 U	20 U
Dibenz[a,h]Anthracene	140	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Benzo[g,h,i]Perylene	--	20 U	20 U	20 U	20 U	20 U	25	20 U	64	20 U	20 U	20 U	20 U	20 U
cPAH TEQ	100	ND	ND	ND	ND	ND	27.1	ND	99.4	ND	2.1	ND	ND	ND

TABLE 8
SOIL ANALYTICAL RESULTS
CLOSED CITY OF YAKIMA LANDFILL SITE

Location: Depth: Laboratory ID: Sample Date:	Screening Levels	MW-108 (2.5-3.5) EV14090040-01 9/4/2014	MW-108 (21.5-22.5) EV14090040-02 9/4/2014	MW-109 (5-5.5) EV14090067-03 9/11/2014	MW-109 (12.5-13) EV14090067-04 9/11/2014	GP-23 (15.0-15.5) EV14100222-03 10/30/2014	GP-24 (12.5-13.0) EV14100222-02 10/30/2014	GP-26 (7.5-8.5) EV14100222-01 10/29/2014	GP-27 (5.5-6.5) EV15040134-02 4/23/2015	GP-28 (6.5-7.5) EV15040134-03 4/23/2015	GP-29 (8.0-9.0) EV15040134-04 4/23/2015	GP-30 (8.0-8.5) EV15040134-05 4/24/2015	GP-31 (6.5-7.5) EV15040134-01 4/22/2015
TOTAL PETROLEUM HYDROCARBONS (mg/kg)													
HCID													
Gas Range	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Diesel Range	--	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Oil Range	--	>100	100 U	100 U	100 U	100 U	>100	100 U	>100	>100	100 U	100 U	100 U
NWTPH-Gx													
Gasoline Range	30/100 (a)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx													
Diesel Range (w/SGC)	2,000	25 U	NA	NA	NA	NA	140	NA	25 U	25 U	NA	NA	NA
Diesel Range (wo/SGC)	2,000	25 U	NA	NA	NA	NA	160	NA	25 U	25 U	NA	NA	NA
Oil Range (w/SGC)	2,000	130	NA	NA	NA	NA	280	NA	150	78	NA	NA	NA
Oil Range (wo/SGC)	2,000	160	NA	NA	NA	NA	300	NA	280	150	NA	NA	NA
TOTAL METALS (mg/kg)													
Methods EPA-6020/EPA-7471													
Arsenic	20	3.5	4.1	5.4	1.7	2.3	2.0	2.3	2.5	2.3	3.1	1.6	2.0
Barium	824	140	73	150	63	110	140	170	130	100	130	60	74
Cadmium	2.0	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.26 U	0.26 U	0.24 U	0.25 U	0.27 U
Chromium	2,000	17	41	16	14	17	17	24	17	17	19	14	14
Chromium (VI) (EPA-7196)	19	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA
Iron	151	28,000	23,000	31,000	23,000	24,000	25,000	30,000	28,000	24,000	29,000	22,000	22,000
Lead	250	26	3.5	39	3.4	23	9.1	17	25	14	8.7	3.5	5.1
Manganese	11,000	570	240	680	360	240	280	340	430	320	510	320	270
Selenium	400	5.0 U	5.0 U	5.0 U	5.0 U	5.6 U	5.0 U	5.3 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Silver	400	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.26 U	0.27 U	0.25 U	0.26 U	0.28 U
Sodium	--	650	990	670	680	570	530	610	590	570	700	440	540
Mercury	2.0	0.12	0.020 U	0.061	0.020 U	0.13	0.077	0.12	0.14	0.12	0.089	0.044	0.058
CONVENTIONALS (mg/kg)													
Fluoride (EPA-300.0M)	3,200	1.6 U	1.6 U	1.6 U	1.6 U	3.7	2.2	1.0 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Nitrate as N (EPA-300.0M)	130,000	0.50 UJ	0.50 UJ	21	1.2	4.0 U	4.0 U	4.0 U	67	8.9	17	1.7	1.7
Nitrite as N (EPA-300.0M)	8,000	0.50 UJ	0.50 UJ	0.50 U	0.50 U	4.0 U	4.0 U	4.0 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
pH (lab)	--	NA	7.98	7.64	8.42	6.95	6.07	6.29	6.27	6.80	7.82	7.60	7.58
PESTICIDES (mg/kg)													
Method EPA-8081													
A-BHC	0.16	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.00054 U	0.00058 U	0.00054 U	0.00056 U	0.00060 U
G-BHC (Lindane)	0.01	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.00054 U	0.00058 U	0.00054 U	0.00056 U	0.00060 U
B-BHC	0.56	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.00054 U	0.00058 U	0.00054 U	0.00056 U	0.00060 U
Heptachlor	0.22	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U
D-BHC	--	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.00054 U	0.00058 U	0.00054 U	0.00056 U	0.00060 U
Aldrin	0.059	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.00054 U	0.00058 U	0.00054 U	0.00056 U	0.00060 U
Heptachlor Epoxide	0.11	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.00054 U	0.00058 U	0.00054 U	0.00056 U	0.00060 U
Chlordane	2.9	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.00060 U	0.00060 U	0.00060 U	0.00060 U	0.00060 U
Endosulfan I (b)	0.003	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
4,4'-DDE	2.9	NA	0.0031 U	0.0022	0.0026 U	0.0045 U	0.0032 U	0.0059	0.0030	0.0024	0.0016 U	0.0016 U	0.0016 U
Dieldrin	0.063	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0058 U	0.00054 U	0.00058 U	0.00054 U	0.00056 U	0.00060 U
Endrin (c)	24	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.00054 U	0.00058 U	0.00054 U	0.00056 U	0.00060 U
4,4'-DDD	0.009	NA	0.0031 U	0.0026 U	0.0026 U	0.0060	0.0032 U	0.045	0.0010 U	0.0012	0.0010 U	0.0010 U	0.0010 U
Endosulfan II (b)	0.003	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U
4,4'-DDT	3.0	NA	0.0031 U	0.0032	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.0019	0.00085 U	0.0011	0.00085 U	0.00085 U
Endrin Aldehyde (c)	24	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U
Endosulfan Sulfate (b)	0.003	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0053	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00060 U
Methoxychlor	400	NA	0.0031 U	0.0026 U	0.0026 U	0.0045 U	0.0032 U	0.0040 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U
Hexachlorobenzene	630	NA	NA	NA	NA	NA	NA	NA	0.00054 U	0.00058 U	0.00054 U	0.00056 U	0.00060 U
Toxaphene	0.91	NA	0.16 U	0.13 U	0.13 U	0.23 U	0.16 U	0.20 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U

TABLE 8
SOIL ANALYTICAL RESULTS
CLOSED CITY OF YAKIMA LANDFILL SITE

Location: Depth: Laboratory ID: Sample Date:	Screening Levels	MW-108 (2.5-3.5) EV14090040-01 9/4/2014	MW-108 (21.5-22.5) EV14090040-02 9/4/2014	MW-109 (5-5.5) EV14090067-03 9/11/2014	MW-109 (12.5-13) EV14090067-04 9/11/2014	GP-23 (15.0-15.5) EV14100222-03 10/30/2014	GP-24 (12.5-13.0) EV14100222-02 10/30/2014	GP-26 (7.5-8.5) EV14100222-01 10/29/2014	GP-27 (5.5-6.5) EV15040134-02 4/23/2015	GP-28 (6.5-7.5) EV15040134-03 4/23/2015	GP-29 (8.0-9.0) EV15040134-04 4/23/2015	GP-30 (8.0-8.5) EV15040134-05 4/24/2015	GP-31 (6.5-7.5) EV15040134-01 4/22/2015
PCBs (mg/kg)													
Method EPA-8082													
PCB-1016	5.6	NA	0.0062 U	0.0052 U	0.0052 U	0.018 U	0.013 U	0.016 U	0.0054 U	0.0058 U	0.0054 U	0.0056 U	0.0060 U
PCB-1221	--	NA	0.013 U	0.011 U	0.011 U	0.036 U	0.025 U	0.032 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U
PCB-1232	--	NA	0.0062 U	0.0052 U	0.0052 U	0.018 U	0.013 U	0.016 U	0.0054 U	0.0058 U	0.0054 U	0.0056 U	0.0060 U
PCB-1242	--	NA	0.0062 U	0.0052 U	0.0052 U	0.018 U	0.013 U	0.016 U	0.0054 U	0.0058 U	0.0054 U	0.0056 U	0.0060 U
PCB-1248	--	NA	0.0062 U	0.0052 U	0.0052 U	0.018 U	0.013 U	0.016 U	0.0054 U	0.0058 U	0.0054 U	0.0056 U	0.0060 U
PCB-1254	0.50	NA	0.0062 U	0.0052 U	0.0052 U	0.018 U	0.013 U	0.016 U	0.0099	0.0058 U	0.0054 U	0.0056 U	0.0060 U
PCB-1260	0.50	NA	0.0062 U	0.0052 U	0.0052 U	0.018 U	0.013 U	0.016 U	0.0057	0.0058 U	0.0054 U	0.0056 U	0.0060 U
Total PCBs	1.0	ND	ND	ND	ND	ND	ND	ND	0.0156	ND	ND	ND	ND
VOCs (µg/kg)													
Method EPA-8260													
Dichlorodifluoromethane	16,000,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Chloromethane	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Vinyl Chloride	0.2	NA	0.032 U	0.041 U	0.033 U	0.053 U	0.040 U	0.058 U	0.048 U	0.047 U	0.043 U	NA	0.038 U
Bromomethane	110,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Chloroethane	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Carbon Tetrachloride	14,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Trichlorofluoromethane	24,000,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Carbon Disulfide	8,000,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Acetone	72,000,000	NA	50 U	50 U	50 U	50 U	130 U	250	280	280	190	NA	52
1,1-Dichloroethene	4,000,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Methylene Chloride	20	NA	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	NA	20 U
Acrylonitrile	1,900	NA	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA	50 U
Methyl T-Butyl Ether (MTBE)	100	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Trans-1,2-Dichloroethene	1,600,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,1-Dichloroethane	180,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
2-Butanone (MEK)	48,000,000	NA	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA	50 U
Cis-1,2-Dichloroethene	160,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
2,2-Dichloropropane	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Bromochloromethane	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Chloroform	8	NA	8.0 U	8.0 U	8.0 U	8 U	8 U	8 U	8.0 U	8.0 U	8.0 U	NA	8.0 U
1,1,1-Trichloroethane	2,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,1-Dichloropropene	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,2-Dichloroethane	11,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Benzene	30	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U
Trichloroethene	30	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,2-Dichloropropane	28,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Dibromomethane	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Bromodichloromethane	16,000	NA	0.78 U	0.99 U	0.80 U	1.3 U	0.96 U	1.4 U	1.2 U	1.1 U	1.0 U	NA	0.91 U
Trans-1,3-Dichloropropene	10,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
4-Methyl-2-Pentanone (MIBK)	6,400,000	NA	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA	50 U
Toluene	7,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Cis-1,3-Dichloropropene	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,1,2-Trichloroethane	18,000	NA	0.83 U	1.0 U	0.85 U	1.4 U	1.0 U	1.5 U	1.2 U	1.2 U	1.1 U	NA	0.97 U
2-Hexanone	--	NA	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA	50 U
1,3-Dichloropropane	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Tetrachloroethene (PCE)	50	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Dibromochloromethane	12,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,2-Dibromoethane (EDB)	5.0	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U
Chlorobenzene	1,600,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,1,1,2-Tetrachloroethane	38,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Ethylbenzene	6,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
m,p-Xylene (d)	16,000,000	NA	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	NA	20 U
Styrene	16,000,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
o-Xylene	16,000,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Bromoform	130,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U

TABLE 8
SOIL ANALYTICAL RESULTS
CLOSED CITY OF YAKIMA LANDFILL SITE

Location: Depth: Laboratory ID: Sample Date:	Screening Levels	MW-108 (2.5-3.5) EV14090040-01 9/4/2014	MW-108 (21.5-22.5) EV14090040-02 9/4/2014	MW-109 (5-5.5) EV14090067-03 9/11/2014	MW-109 (12.5-13) EV14090067-04 9/11/2014	GP-23 (15.0-15.5) EV14100222-03 10/30/2014	GP-24 (12.5-13.0) EV14100222-02 10/30/2014	GP-26 (7.5-8.5) EV14100222-01 10/29/2014	GP-27 (5.5-6.5) EV15040134-02 4/23/2015	GP-28 (6.5-7.5) EV15040134-03 4/23/2015	GP-29 (8.0-9.0) EV15040134-04 4/23/2015	GP-30 (8.0-8.5) EV15040134-05 4/24/2015	GP-31 (6.5-7.5) EV15040134-01 4/22/2015
Isopropylbenzene (cumene)	8,000,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,1,2,2-Tetrachloroethane	5,000	NA	0.86 U	1.1 U	0.88 U	1.4 U	1.1 U	1.6 U	1.3 U	1.3 U	1.1 U	NA	1.0 U
1,2,3-Trichloropropane	33	NA	0.90 U	1.1 U	0.92 U	1.5 U	1.1 U	1.6 U	1.3 U	1.3 U	1.2 U	NA	1.1 U
Bromobenzene	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
N-Propyl Benzene	8,000,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
2-Chlorotoluene	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,3,5-Trimethylbenzene	800,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
4-Chlorotoluene	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
T-Butyl Benzene	8,000,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,2,4-Trimethylbenzene	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
S-Butyl Benzene	8,000,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
P-Isopropyltoluene	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,3-Dichlorobenzene	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,4-Dichlorobenzene	190,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
N-Butylbenzene	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,2-Dichlorobenzene	7,200,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,2-Dibromo 3-Chloropropane	1,300	NA	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA	50 U
1,2,4-Trichlorobenzene	56	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
Hexachlorobutadiene	13,000	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
1,2,3-Trichlorobenzene	--	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U
SVOCs (µg/kg)													
Method EPA-8270													
Pyridine	80,000	NA	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
N-Nitrosodimethylamine	20	NA	27 U	26 U	24 U	56 U	34 U	42 U	30 U	31 U	28 U	29 U	32 U
Phenol	24,000,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Aniline	180,000	NA	47 U	45 U	42 U	96 U	59 U	72 U	52 U	53 U	48 U	51 U	55 U
Bis(2-Chloroethyl)Ether	910	NA	98 U	93 U	87 U	200 U	120 U	150 U	110 U	110 U	100 U	110 U	110 U
2-Chlorophenol	400,000	NA	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Benzyl Alcohol	8,000,000	NA	100 U	100 U	100 U	110 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
2-Methylphenol	4,000,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Bis(2-Chloroisopropyl)Ether	--	NA	250 U	250 U	250 U	260 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
3&4-Methylphenol	2,000	NA	100 U	100 U	100 U	100 U	100 U	170	100 U				
N-Nitroso-Di-N-Propylamine	140	NA	95 U	90 U	84 U	190 U	120 U	150 U	250 U	250 U	250 U	250 U	250 U
Hexachloroethane	25,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Nitrobenzene	160,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Isophorone	1,050,000	NA	100 U	100 U	100 U	150 U	100 U	110 U	100 U	100 U	100 U	100 U	100 U
2-Nitrophenol	--	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
2,4-Dimethylphenol	1,600,000	NA	100 U	100 U	100 U	130 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Benzoic Acid	320,000,000	NA	1000 U	1000 U	1000 U	1500 U	1000 U	1100 U	1000 U	1000 U	1000 U	1000 U	1000 U
Bis(2-Chloroethoxy)Methane	--	NA	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
2,4-Dichlorophenol	240,000	NA	250 U	240 U	220 U	510 U	310 U	380 U	280 U	280 U	260 U	270 U	290 U
4-Chloroaniline	5,000	NA	1000 U	1000 U	1000 U	1200 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
2,6-Dichlorophenol	--	NA	250 U	250 U	250 U	380 U	250 U	290 U	250 U	250 U	250 U	250 U	250 U
4-Chloro-3-Methylphenol	--	NA	500 U	500 U	500 U	670 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Hexachlorocyclopentadiene	480,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
2,4,6-Trichlorophenol	80,000	NA	40 U	38 U	36 U	82 U	50 U	62 U	45 U	45 U	42 U	44 U	47 U
2,4,5-Trichlorophenol	8,000,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
2-Chloronaphthalene	--	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
2-Nitroaniline	800,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Dimethylphthalate	--	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
2,6-Dinitrotoluene	670	NA	38 U	36 U	33 U	77 U	47 U	58 U	42 U	42 U	39 U	41 U	44 U
3-Nitroaniline	--	NA	1000 U	1000 U	1000 U	1200 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
2,4-Dinitrophenol	160,000	NA	100 U	100 U	100 U	110 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
4-Nitrophenol	--	NA	100 U	100 U	100 U	110 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Dibenzofuran	80,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
2,4-Dinitrotoluene	3,200	NA	22 U	21 U	19 U	45 U	27 U	34 U	100 U	100 U	100 U	100 U	100 U
2,3,4,6-Tetrachlorophenol	2,400,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Diethylphthalate	64,000,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U

TABLE 8
SOIL ANALYTICAL RESULTS
CLOSED CITY OF YAKIMA LANDFILL SITE

Location: Depth: Laboratory ID: Sample Date:	Screening Levels	MW-108 (2.5-3.5) EV14090040-01 9/4/2014	MW-108 (21.5-22.5) EV14090040-02 9/4/2014	MW-109 (5-5.5) EV14090067-03 9/11/2014	MW-109 (12.5-13) EV14090067-04 9/11/2014	GP-23 (15.0-15.5) EV14100222-03 10/30/2014	GP-24 (12.5-13.0) EV14100222-02 10/30/2014	GP-26 (7.5-8.5) EV14100222-01 10/29/2014	GP-27 (5.5-6.5) EV15040134-02 4/23/2015	GP-28 (6.5-7.5) EV15040134-03 4/23/2015	GP-29 (8.0-9.0) EV15040134-04 4/23/2015	GP-30 (8.0-8.5) EV15040134-05 4/24/2015	GP-31 (6.5-7.5) EV15040134-01 4/22/2015
4-Chlorophenyl-Phenylether	--	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
4-Nitroaniline	--	NA	250 U	250 U	250 U	260 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
4,6-Dinitro-2-Methylphenol	--	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
N-Nitrosodiphenylamine	100	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Azobenzene	9,100	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
4-Bromophenyl-Phenylether	--	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Hexachlorobenzene	630	NA	100 U	100 U	100 U	100 U	100 U	100 U	NA	NA	NA	NA	NA
Carbazole	--	NA	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Di-N-Butylphthalate	8,000,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Butylbenzylphthalate	530,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
3,3'-Dichlorobenzidine	213	NA	170 U	170 U	150 U	360 U	220 U	270 U	190 U	200 U	180 U	190 U	200 U
Bis(2-Ethylhexyl)Phthalate	2,600	NA	100 U	100	190	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Di-N-Octylphthalate	800,000	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
PAHs (µg/kg) Method EPA-8270 SIM													
Naphthalene	5,000	20 U	20 U	28	20 U	250	20 U	120	20 U				
2-Methylnaphthalene	320,000	20 U	20 U	20 U	20 U	32	20 U	22	20 U				
1-Methylnaphthalene	35,000	20 U	20 U	20 U	20 U	22	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Acenaphthylene	--	20 U	20 U	20 U	20 U	81	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Acenaphthene	66,000	20 U	20 U	20 U	20 U	22	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Fluorene	101,000	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Pentachlorophenol	76.9	65 U	55 U	48 U	51 U	110 U	67 U	79 U	47 U	47 U	43 U	45 U	49 U
Phenanthrene	--	20 U	20 U	35	20 U	170	20 U	100	20 U				
Anthracene	2,275,000	20 U	20 U	20 U	20 U	28	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Fluoranthene	85,000	23	20 U	61	20 U	250	20 U	120	20 U				
Pyrene	655,000	20 U	20 U	47	20 U	170	20 U	93	20 U				
Benzo[a]Anthracene	1,400	52	20 U	20 U	20 U	44	20 U	29	20 U				
Chrysene	140,000	20 U	20 U	24	20 U	45	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Benzo[b]Fluoranthene	180	20 U	20 U	20 U	20 U	88	20 U	37	20 U				
Benzo[k]Fluoranthene	570	20 U	20 U	21	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Benzo[a]Pyrene	100	20 U	20 U	20 U	20 U	35	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Indeno[1,2,3-cd]Pyrene	1,400	20 U	20 U	20 U	20 U	27	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Dibenz[a,h]Anthracene	140	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Benzo[g,h,i]Perylene	--	20 U	20 U	20 U	20 U	58	20 U	43	20 U				
cPAH TEQ	100	5.2	ND	2.3	ND	51.4	ND	6.6	ND	ND	ND	ND	ND

µg/kg = micrograms per kilogram

mg/kg = milligram per kilogram

PCBs = polychlorinated biphenyls

PQL = practical quantitation limit

SGC = silica gel cleanup

SVOCs = semivolatile organic compounds

VOCs = volatile organic compounds

NA = not analyzed

ND = not detected.

HCID = hydrocarbon identification method

cPAH = carcinogenic polycyclic aromatic hydrocarbon

TEQ = toxic equivalent

Ecology = Washington State Department of Ecology

EPA = U.S. Environmental Protection Agency

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

U = Indicates the compound was not detected at the reported concentration.

Bold = Detected compound.

Green Box = Exceedance of screening level.

(a) Screening level is 30 mg/kg when benzene is present, 100 when benzene is not detectable.

(b) Screening level for endosulfan isomers based on criteria for endosulfan.

(c) Screening level for endrin isomers based on criteria for endrin.

(d) Screening criteria is value for m-xylene.

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	TP-MW-1 EV14090107-22 9/17/2014	TP-MW-1 EV14120162-04 12/19/2014	TP-MW-1 EV15030143-01 3/25/2015	TP-MW-1 EV15060175-06 6/24/2015	FPP-MW-1 EV14120162-08 12/19/2014	FPP-MW-1 EV15030127-11 3/24/2015	FPP-MW-1 EV15060188-02 6/25/2015	TP-MW-2 EV14090107-23 9/17/2014	TP-MW-2 EV14120162-03 12/19/2014	TP-MW-2 EV15030143-02 3/25/2015	TP-MW-2 EV15060181-08 6/25/2015	FPP-MW-2 EV14120151-03 EV14120162-14 12/18/2014	FPP-MW-2 EV15030154-07 3/26/2015	FPP-MW-2 EV15060175-09 6/24/2015
TOTAL PETROLEUM HYDROCARBONS (µg/L)																
HCID																
Gas Range	--		130 U	130 U	NA	NA	NA	NA	NA	130 U	130 U	NA	NA	NA	NA	NA
Diesel Range	--		310 U	310 U	NA	NA	NA	NA	NA	310 U	310 U	NA	NA	NA	NA	NA
Oil Range	--		310 U	310 U	NA	NA	NA	NA	NA	310 U	>310	NA	NA	NA	NA	NA
NWTPH-G (c)	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx																
Diesel Range (w/SGC)	500		NA	NA	130 U	130 U	1400	950	3000	NA	470	1600	430	220	220 J	140
Diesel Range (wo/SGC)	500		NA	NA	130 U	130 U	3600	3000	8600	NA	1500	6200	1400	670	940 J	450
Oil Range (w/SGC)	500		NA	NA	250 U	250 U	260 J	620	470 J	NA	300	570	320	250 U	570	250 U
Oil Range (wo/SGC)	500		NA	NA	250 U	250 U	1000 J	1100	1900 J	NA	450	1700	700	270	790	250 J
DISSOLVED METALS (µg/L)																
Methods EPA-200.8/EPA-7470/EPA-7196																
Arsenic	0.45	0.45	1.0 U	0.45 U	0.97	0.49	2.3	2.0	4.1	3.9	2.7	12	5.5	4.2	5.9	2.5
Barium	1,000		8.3	5.3	18	10	99	63	120	17	19	120	43	33	40	27
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		19,000	14,000	42,000	25,000	64,000	50,000	81,000	30,000	33,000	68,000	38,000	36,000	39,000	31,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	15	3.3	2.0 U	2.0 U
Chromium (VI) (e)	10		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	300		50 U	50 U	50 U	50 U	43,000	32,000	53,000	12,000	12,000	31,000	15,000	17,000	15,000	14,000
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	1.7	0.75	0.28 U	0.28 U	0.28 U
Magnesium	--		6600	4600	16,000	8700	19,000	14,000	25,000	10,000	12,000	18,000	12,000	13,000	14,000	11,000
Manganese	50		2.0 U	2.5	9.3	2.3	3700	2700	5300	1300	1500	1100	960	1500	1400	1500
Potassium	--		NS	NS	4200	3300	NS	6400	7900	NS	NS	11,000	6500	NS	5600	4200
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		11,000	9700	23,000	13,000	53,000	42,000	62,000	21,000	20,000	130,000	59,000	36,000	42,000	32,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U
TOTAL METALS (µg/L)																
Methods EPA-200.8/EPA-7470/EPA-7196																
Arsenic	0.45	0.45	1.0 U	0.45 U	0.56	0.63 U	2.3	2.6	2.8	3.8	3.3	12	6.8	4.2	7.6	2.5 U
Barium	1,000		9.2	6.7	18	9.6	100	73	130	18	21	130	55	36	44	29
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		20,000	13,000	43,000	22,000	65,000	53,000	89,000	30,000	32,000	75,000	41,000	38,000	40,000	33,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	15	8.6	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	300		50 U	130	50 U	50 U	43,000	35,000	57,000	12,000	12,000	34,000	20,000	18,000	17,000	15,000
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	2.1	2.2 U	0.28 U	0.28 U	0.28 U
Magnesium	--		6700	4500	16,000	7600	19,000	15,000	27,000	10,000	11,000	19,000	12,000	13,000	14,000	12,000
Manganese	50		5.8	9.7	15	8.1	3800	2900	5800	1300	1500	1200	1000	1600	1500	1600
Potassium	--		NS	NS	4300	3000	NS	6700	8700	NS	NS	12,000	6600	NS	5800	4400
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		11,000	9300	23,000	11,000	53,000	45,000	68,000	21,000	19,000	140,000	65,000	38,000	42,000	34,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
CONVENTIONALS (mg/L)																
Total Dissolved Solids (SM2540C)	--		NS	150	260	150	490	320	590	NS	270	1300	520	240	280	220
Chloride (EPA-300.0)	230		7.2	5.5	17	9.0	44	30	90	14	9.0	14	10	18	15	14
Fluoride (EPA-300.0)	0.64		0.16 U	0.34	0.21	0.16 U	0.29	0.27	0.16 U	0.20	0.47	2.4	0.19	0.49	0.26	0.19
Nitrate as N (EPA-300.0)	10		1.9 J	0.16	1.2	2.6	0.038	0.034 U	0.034 U	0.034 UJ	0.034 U	0.034 U	0.034 U	0.063	0.034 U	0.034 U
Nitrite as N (EPA-300.0)	1.0		0.043 UJ	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 UJ	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U
Sulfate (EPA-300.0)	--		9.0	5.5	12	12	0.26 U	0.26 U	2.7	6.8	1.2	0.26 U	0.99	0.26 U	19	4.3
Ammonia (EPA-350.1)	--		NS	0.050 U	0.050 U	0.050 U	3.6	3.1	3.6	NS	0.79	12	2.8	2.1	4.8	1.0
Alkalinity as CaCO ₃ , Total (SM2320B)	--		NS	64	180	100	320	260	440	NS	170	470	280	240	260	200
Bicarbonate as CaCO ₃ (SM2320B)	--		NS	64	180	100	320	260	440	NS	170	470	280	240	260	200
Total Organic Carbon (TOC) (SM5310C)	--		NS	1.9	2.2	1.2	21	15	28	NS	9.6	430	100	6.2	9.8	5.8

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Table 9 - Groundwater Analytical Results

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	TP-MW-1 EV14090107-22 9/17/2014	TP-MW-1 EV14120162-04 12/19/2014	TP-MW-1 EV15030143-01 3/25/2015	TP-MW-1 EV15060175-06 6/24/2015	FPP-MW-1 EV14120162-08 12/19/2014	FPP-MW-1 EV15030127-11 3/24/2015	FPP-MW-1 EV15060188-02 6/25/2015	TP-MW-2 EV14090107-23 9/17/2014	TP-MW-2 EV14120162-03 12/19/2014	TP-MW-2 EV15030143-02 3/25/2015	TP-MW-2 EV15060181-08 6/25/2015	FPP-MW-2 EV14120151-03 EV14120162-14 12/18/2014	FPP-MW-2 EV15030154-07 3/26/2015	FPP-MW-2 EV15060175-09 6/24/2015
FIELD PARAMETERS																
Temperature (°C)	--		16.93	14.54	12.49	16.12	16.54	15.32	23.24	16.47	14.60	13.67	16.44	15.13	14.05	18.44
Specific Conductivity (uS/cm)	--		443	113	456	203	768	1004	2200	832	283	2127	989	434	743	369
Dissolved Oxygen (mg/L)	--		8.96	3.85	1.57	5.23	2.16	0.80	0.58	2.50	2.73	0.45	0.25	1.11	5.15	3.77
pH (S.U.)	6.5 to 8.5		6.28	6.54	6.61	6.35	6.38	6.30	6.37	6.54	6.46	6.24	6.19	6.47	6.55	6.51
Oxidation Reduction Potential (mV)	--		48.8	23.5	-36.1	94.1	-87.3	-136.1	-106.5	-78.5	-35.5	-84.2	-68.3	-61.1	-58.8	-87.7
Turbidity (NTU)	--		8.56	27.0	1.32	0.73	7.19	11.8	4.82	6.84	13.8	16.5	29.2	3.27	9.51	1.47
PESTICIDES (µg/L)																
Method EPA-8081																
hexachlorocyclohexane, alpha (A-BHC)	0.01	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
G-BHC (Lindane)	0.019	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
hexachlorocyclohexane; beta (B-BHC)	0.01	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Heptachlor	0.01	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
hexachlorocyclohexane, delta (D-BHC)	0.012	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Aldrin	0.01	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Heptachlor Epoxide	0.01	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chlordane	0.20	0.20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Endosulfan I (g)	0.056		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4,4'-DDE	0.01	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dieldrin	0.01	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Endrin	0.01	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4,4'-DDD	0.01	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Endosulfan II (g)	0.056		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4,4'-DDT	0.01	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Endrin Aldehyde (h)	0.01	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Endosulfan Sulfate (g)	0.056		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Methoxychlor	0.030	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Hexachlorobenzene (i)	0.01	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Toxaphene	0.50	0.50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCBs (µg/L)																
Method EPA-8082																
PCB-1016	0.005	0.005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCB-1221	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCB-1232	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCB-1242	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCB-1248	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCB-1254	0.005	0.005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCB-1260	0.014	0.005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total PCBs (j)	0.10		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
VOCs (µg/L)																
Method EPA-8260																
Dichlorodifluoromethane	1,600		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chloromethane	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromomethane	11		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chloroethane	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichlorofluoromethane	2,400		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbon Disulfide	800		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acetone	7,200		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethene	0.057	0.014	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Methylene Chloride	4.6	0.68	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acrylonitrile	0.0572	0.0572	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Methyl T-Butyl Ether (MTBE)	20		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trans-1,2-Dichloroethene	100		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethane	7.7		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone (MEK)	4,800		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Table 9 - Groundwater Analytical Results

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	TP-MW-1 EV14090107-22 9/17/2014	TP-MW-1 EV14120162-04 12/19/2014	TP-MW-1 EV15030143-01 3/25/2015	TP-MW-1 EV15060175-06 6/24/2015	FPP-MW-1 EV14120162-08 12/19/2014	FPP-MW-1 EV15030127-11 3/24/2015	FPP-MW-1 EV15060188-02 6/25/2015	TP-MW-2 EV14090107-23 9/17/2014	TP-MW-2 EV14120162-03 12/19/2014	TP-MW-2 EV15030143-02 3/25/2015	TP-MW-2 EV15060181-08 6/25/2015	FPP-MW-2 EV14120151-03 EV14120162-14 12/18/2014	FPP-MW-2 EV15030154-07 3/26/2015	FPP-MW-2 EV15060175-09 6/24/2015
Cis-1,2-Dichloroethene	16		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Hexane (k)	480		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,2-Dichloropropane	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromochloromethane	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	200		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloropropene	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dichloroethane	0.38	0.014	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzene	1.2	0.028	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dibromomethane	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromodichloromethane	0.080	0.059	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Methyl-2-Pentanone (MIBK)	640		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Toluene	640		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cis-1,3-Dichloropropene	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Hexanone	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3-Dichloropropane	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloroethene (PCE)	0.69	0.023	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dibromoethane (EDB)	0.01		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chlorobenzene	100		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ethylbenzene	70		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
m,p-Xylene (l)	1,600		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	100		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
o-Xylene	1,600		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromoform	4.3		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Isopropylbenzene (cumene)	800		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,3-Trichloropropane	0.023	0.023	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromobenzene	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
N-Propyl Benzene	800		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Chlorotoluene	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3,5-Trimethylbenzene	80		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Chlorotoluene	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
T-Butyl Benzene	800		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trimethylbenzene	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
S-Butyl Benzene	800		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
P-Isopropyltoluene	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3 Dichlorobenzene	320		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,4-Dichlorobenzene	8.1		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
N-Butylbenzene	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dichlorobenzene	420		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dibromo 3-Chloropropane	0.0997	0.0997	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Hexachlorobutadiene	0.44		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,3-Trichlorobenzene	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
VOCs (µg/L)																
Method EPA-8260SIM (m)																
Vinyl Chloride	0.031	0.031	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbon Tetrachloride	0.23		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chloroform	1.4		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene (TCE)	2.5		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dichloropropane	0.50		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trans-1,3-Dichloropropene	0.34		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,2-Trichloroethane	0.59		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dibromochloromethane	0.40		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,1,2-Tetrachloroethane	1.7		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,2,2-Tetrachloroethane	0.17		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	1.5		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	TP-MW-1 EV14090107-22 9/17/2014	TP-MW-1 EV14120162-04 12/19/2014	TP-MW-1 EV15030143-01 3/25/2015	TP-MW-1 EV15060175-06 6/24/2015	FPP-MW-1 EV14120162-08 12/19/2014	FPP-MW-1 EV15030127-11 3/24/2015	FPP-MW-1 EV15060188-02 6/25/2015	TP-MW-2 EV14090107-23 9/17/2014	TP-MW-2 EV14120162-03 12/19/2014	TP-MW-2 EV15030143-02 3/25/2015	TP-MW-2 EV15060181-08 6/25/2015	FPP-MW-2 EV14120151-03 EV14120162-14 12/18/2014	FPP-MW-2 EV15030154-07 3/26/2015	FPP-MW-2 EV15060175-09 6/24/2015
SVOCs (µg/L)																
Method EPA-8270																
Pyridine	8.0		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
N-Nitrosodimethylamine	1.51	1.51	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Phenol	2,400		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Aniline	7.7		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bis(2-Chloroethyl)Ether	0.94	0.94	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Chlorophenol	40		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzyl Alcohol	800		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Methylphenol	400		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bis(2-Chloroisopropyl)Ether	1,400		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3&4-Methylphenol (n)	400		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
N-Nitroso-Di-N-Propylamine	2.0	2.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Hexachloroethane	2.0	2.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nitrobenzene	16		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Isophorone	8.4		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Nitrophenol	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,4-Dimethylphenol	160		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzoic Acid	64,000		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bis(2-Chloroethoxy)Methane	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,4-Dichlorophenol	24		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Chloroaniline (p-Chloroaniline)	1.89	1.89	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,6-Dichlorophenol	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Chloro-3-Methylphenol	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Hexachlorocyclopentadiene	40		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,4,6-Trichlorophenol	1.4	0.90	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,4,5-Trichlorophenol	800		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Chloronaphthalene	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Nitroaniline	160		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dimethylphthalate	270,000		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,6-Dinitrotoluene	1.82	1.82	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3-Nitroaniline	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,4-Dinitrophenol	32		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Nitrophenol	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dibenzofuran	16		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,4-Dinitrotoluene	0.78	0.78	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,3,4,6-Tetrachlorophenol	480		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Diethylphthalate	13,000		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Chlorophenyl-Phenylether	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Nitroaniline	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4,6-Dinitro-2-Methylphenol	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
N-Nitrosodiphenylamine	3.3		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Azobenzene	1.63	1.63	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Bromophenyl-Phenylether	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbazole	--		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Di-N-Butylphthalate	1,600		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Butylbenzylphthalate	8.3		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3,3'-Dichlorobenzidine	2.0	2.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bis(2-Ethylhexyl)Phthalate	1.2	0.81	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Di-N-Octylphthalate	160		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Table 9 - Groundwater Analytical Results

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	TP-MW-1 EV14090107-22 9/17/2014	TP-MW-1 EV14120162-04 12/19/2014	TP-MW-1 EV15030143-01 3/25/2015	TP-MW-1 EV15060175-06 6/24/2015	FPP-MW-1 EV14120162-08 12/19/2014	FPP-MW-1 EV15030127-11 3/24/2015	FPP-MW-1 EV15060188-02 6/25/2015	TP-MW-2 EV14090107-23 9/17/2014	TP-MW-2 EV14120162-03 12/19/2014	TP-MW-2 EV15030143-02 3/25/2015	TP-MW-2 EV15060181-08 6/25/2015	FPP-MW-2 EV14120151-03 EV14120162-14 12/18/2014	FPP-MW-2 EV15030154-07 3/26/2015	FPP-MW-2 EV15060175-09 6/24/2015
PAHs (µg/L) Method EPA-8270 SIM																
Naphthalene	160		0.029	NS	NS	NS	0.014 U	0.052	0.014 U	0.020 U	NS	NS	NS	0.014 U	0.013 U	0.013 U
2-Methylnaphthalene	32		0.020 U	NS	NS	NS	0.020 U	0.02 U	0.020 U	0.020 U	NS	NS	NS	0.020 U	0.02 U	0.020 U
1-Methylnaphthalene	1.5		0.020 U	NS	NS	NS	0.020 U	0.02 U	0.020 U	0.020 U	NS	NS	NS	0.020 U	0.02 U	0.020 U
Acenaphthylene	--		0.020 U	NS	NS	NS	0.020 U	0.02 U	0.020 U	0.020 U	NS	NS	NS	0.020 U	0.02 U	0.020 U
Acenaphthene	650		0.020 U	NS	NS	NS	0.014 U	0.014 U	0.014 U	0.020 U	NS	NS	NS	0.014 U	0.014 U	0.014 U
Fluorene	640		0.020 U	NS	NS	NS	0.013	0.0090 U	0.0092 U	0.020 U	NS	NS	NS	0.0092 U	0.0090 U	0.010
Pentachlorophenol	0.23	0.23	0.13 U	NS	NS	NS	0.12 U	0.22	0.12 U	0.13 U	NS	NS	NS	0.12 U	0.12 U	0.12 U
Phenanthrene	--		0.020 U	NS	NS	NS	0.018	0.013 U	0.014 U	0.020 U	NS	NS	NS	0.014 U	0.013 U	0.013 U
Anthracene	4,800		0.020 U	NS	NS	NS	0.01 U	0.01 U	0.01 U	0.020 U	NS	NS	NS	0.01 U	0.012	0.01 U
Fluoranthene	86		0.020 U	NS	NS	NS	0.0093 U	0.0092 U	0.0093 U	0.020 U	NS	NS	NS	0.0093 U	0.0092 U	0.0092 U
Pyrene	480		0.020 U	NS	NS	NS	0.011 U	0.13	0.011 U	0.020 U	NS	NS	NS	0.011 U	0.014	0.01 U
Benzo[A]Anthracene	0.00940	0.00940	0.020 U	NS	NS	NS	0.017 U	0.017 U	0.017 U	0.020 U	NS	NS	NS	0.017 U	0.017 U	0.017 U
Chrysene	0.00940	0.00940	0.020 U	NS	NS	NS	0.018 U	0.018 U	0.018 U	0.020 U	NS	NS	NS	0.018 U	0.018 U	0.018 U
Benzo[B]Fluoranthene	0.00730	0.00730	0.020 U	NS	NS	NS	0.0068 U	0.02	0.0068 U	0.020 U	NS	NS	NS	0.0068 U	0.011	0.0068 U
Benzo[K]Fluoranthene	0.0237	0.0237	0.020 U	NS	NS	NS	0.013 U	0.019	0.013 U	0.020 U	NS	NS	NS	0.013 U	0.013 U	0.013 U
Benzo[A]Pyrene	0.0104	0.0104	0.029 U	NS	NS	NS	0.027 U	0.027 U	0.027 U	0.027 U	NS	NS	NS	0.027 U	0.027 U	0.027 U
Indeno[1,2,3-Cd]Pyrene	0.0164	0.0164	0.020 U	NS	NS	NS	0.014 U	0.014 U	0.014 U	0.020 U	NS	NS	NS	0.014 U	0.014 U	0.014 U
Dibenz[A,H]Anthracene	0.0127	0.0127	0.012 U	NS	NS	NS	0.011 U	0.011 U	0.011 U	0.011 U	NS	NS	NS	0.011 U	0.011 U	0.011 U
Benzo[G,H,I]Perylene	--		0.020 U	NS	NS	NS	0.019 U	0.019	0.019 U	0.020 U	NS	NS	NS	0.019 U	0.019 U	0.019 U
cPAH TEQ (o)	0.10		ND	NS	NS	NS	ND	0.0058	ND	ND	NS	NS	NS	ND	0.0011	ND

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CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Table 9 - Groundwater Analytical Results

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	FFP-MW-3 EV14090091-01 EV14090107-24	FFP-MW-3-Dup EV14090091-10 EV14090107-25	FFP-MW-3 EV14120151-04 EV14120162-16	FFP-MW-3-Dup EV14120151-09 EV14120162-20	FFP-MW-3 EV15030154-01	FFP-MW-3-Dup EV15030154-05	FFP-MW-3 EV15060175-08	FFP-MW-3-Dup EV15060175-02	MW-6 EV14090107-01	MW-6 EV14120162-07	MW-6 EV15030127-08	MW-6 EV15060175-07
TOTAL PETROLEUM HYDROCARBONS (µg/L)														
HCID														
Gas Range	--		130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U
Diesel Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U
Oil Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U
NWTPH-G (c)	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx														
Diesel Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	1.4	1.4	0.58	0.83	0.45 UJ	1.0 J	1.3	1.2	1.3	1.7	2.2	1.1
Barium	1,000		15	15	20	20	16	16	24	24	44	55	47	29
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		22,000	22,000	25,000	24,000	20,000	20,000	26,000	27,000	32,000	35,000	32,000	22,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 UJ	10 UJ	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	300		7600	7500	7900	8000	6500	6600	9100	9200	3100	23,000	23,000	8700
Lead	0.54		1.0 U	1.0 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U
Magnesium	--		8500	8500	9700	9300	7800	7800	11,000	11,000	12,000	12,000	11,000	8000
Manganese	50		440	440	390	390	320	320	500	480	1300	2300	2200	1200
Potassium	--		NS	NS	NS	NS	3100	3100	3600	3600	NS	NS	9200	7100
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	1.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		16,000	16,000	15,000	15,000	13,000	13,000	19,000	18,000	15,000	14,000	13,000	10,000
Mercury	0.11	0.11	0.20 U	0.20 U	0.11 U	0.11 U	0.20 U	0.20 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
TOTAL METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	1.2	1.7	0.45 UJ	1.2 J	1.0 J	0.45 UJ	1.2 U	1.6 U	1.3	2.5	1.1	1.5 U
Barium	1,000		15	15	20	19	17	17	23	22	44	55	50	29
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		22,000	22,000	25,000	24,000	20,000	20,000	27,000	25,000	33,000	34,000	32,000	22,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 UJ	10 UJ	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	300		7700	7500	7600	8000	6800	6700	9200	8300	2800	24,000	23,000	8900
Lead	0.54		1.0 U	1.0 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.30 U	1.0 U	0.28 U	0.28 U	0.28 U
Magnesium	--		8700	8600	9600	9400	8100	7900	11,000	9500	12,000	11,000	11,000	8100
Manganese	50		450	440	390	410	320	320	480	430	1300	2300	2200	1200
Potassium	--		NS	NS	NS	NS	3100	3100	3600	3300	NS	NS	9300	7200
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	1.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		16,000	16,000	15,000	15,000	13,000	13,000	18,000	16,000	14,000	14,000	14,000	10,000
Mercury	0.11	0.11	0.20 U	0.20 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
CONVENTIONALS (mg/L)														
Total Dissolved Solids (SM2540C)	--		170	180	140	170	140	130	160	160	NS	250	180	130
Chloride (EPA-300.0)	230		9.7	9.2	8.7	8.7	9.2	9.2	11	10	20	17	18	9.0
Fluoride (EPA-300.0)	0.64		0.33 J	0.16 UJ	0.50 J	0.17 J	0.16 U	0.16 U	0.16 U	0.16 U	0.17	0.41	0.16 U	0.16 U
Nitrate as N (EPA-300.0)	10		0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.15 U	0.034 U	0.36 J	0.034 U	0.034 U	0.050 U
Nitrite as N (EPA-300.0)	1.0		0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 UJ	0.043 U	0.043 U	0.043 U
Sulfate (EPA-300.0)	--		9.7	9.5	10	10	5.1	4.8	4.7	4.6	2.0	0.26 U	0.26 U	1.7 J
Ammonia (EPA-350.1)	--		0.43	0.52	0.27 J	0.62 J	0.21	0.20	0.32	0.29	NS	1.1	0.64	0.36
Alkalinity as CaCO ₃ , Total (SM2320B)	--		120	120	120	120	100	100	150	150	NS	160	150	110
Bicarbonate as CaCO ₃ (SM2320B)	--		120	120	120	120	100	100	150	150	NS	160	150	110
Total Organic Carbon (TOC) (SM5310C)	--		1.8	1.8	1.4	1.2	1.2	1.3	2.1	2.1	NS	4.7	3.8	4.3

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	FFP-MW-3 EV14090091-01 EV14090107-24 9/16/2014	FFP-MW-3-Dup EV14090091-10 EV14090107-25 9/16/2014	FFP-MW-3 EV14120151-04 EV14120162-16 12/18/2014	FFP-MW-3-Dup EV14120151-09 EV14120162-20 12/18/2014	FFP-MW-3 EV15030154-01 3/26/2015	FFP-MW-3-Dup EV15030154-05 3/26/2015	FFP-MW-3 EV15060175-08 6/24/2015	FFP-MW-3-Dup EV15060175-02 6/24/2015	MW-6 EV14090107-01 9/17/2014	MW-6 EV14120162-07 12/19/2014	MW-6 EV15030127-08 3/24/2015	MW-6 EV15060175-07 6/24/2015
FIELD PARAMETERS														
Temperature (°C)	--		16.49	16.52	16.50	16.54	15.86	15.98	18.43	18.37	20.15	15.35	12.29	17.07
Specific Conductivity (uS/cm)	--		367	385	362	362	554	555	357	344	762	510	440	211
Dissolved Oxygen (mg/L)	--		1.66	1.69	0.19	0.19	0.43	0.40	0.84	0.79	1.07	0.30	0.18	0.28
pH (S.U.)	6.5 to 8.5		6.48	6.50	7 (f)	7 (f)	6.38	6.36	6.71	6.69	6.65	7 (f)	6.50	6.34
Oxidation Reduction Potential (mV)	--		-133.5	-134.5	-97.2	-97.2	-49.1	-51.3	-98.8	-99.3	-43.75	-76.2	-52.8	-57.9
Turbidity (NTU)	--		2.84	2.77	2.82	3.00	1.38	2.06	0.89	0.84	17.75	2.21	3.10	0.54
PESTICIDES (µg/L)														
Method EPA-8081														
hexachlorocyclohexane, alpha (A-BHC)	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
G-BHC (Lindane)	0.019	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
hexachlorocyclohexane; beta (B-BHC)	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Heptachlor	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
hexachlorocyclohexane, delta (D-BHC)	0.012	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Aldrin	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Heptachlor Epoxide	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Chlordane	0.20	0.20	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Endosulfan I (g)	0.056		0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
4,4'-DDE	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Dieldrin	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Endrin	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
4,4'-DDD	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Endosulfan II (g)	0.056		0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
4,4'-DDT	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Endrin Aldehyde (h)	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Endosulfan Sulfate (g)	0.056		0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Methoxychlor	0.030	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Hexachlorobenzene (i)	0.01	0.01	2.0 U	2.0 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 U	0.011 U	NS	NS	NS	NS
Toxaphene	0.50	0.50	0.53 U	0.52 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.51 U	NS	NS	NS	NS
PCBs (µg/L)														
Method EPA-8082														
PCB-1016	0.005	0.005	0.0053 U	0.0052 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	NS	NS	NS	NS
PCB-1221	--		0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	NS	NS	NS	NS
PCB-1232	--		0.0053 U	0.0052 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	NS	NS	NS	NS
PCB-1242	--		0.0053 U	0.0052 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	NS	NS	NS	NS
PCB-1248	--		0.0053 U	0.0052 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	NS	NS	NS	NS
PCB-1254	0.005	0.005	0.0053 U	0.0052 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	NS	NS	NS	NS
PCB-1260	0.014	0.005	0.0053 U	0.0052 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	NS	NS	NS	NS
Total PCBs (j)	0.10		ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS
VOCs (µg/L)														
Method EPA-8260														
Dichlorodifluoromethane	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Chloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Bromomethane	11		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Chloroethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Trichlorofluoromethane	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Carbon Disulfide	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Acetone	7,200		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NS	NS	NS	NS
1,1-Dichloroethene	0.057	0.014	2.0 U	2.0 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	NS	NS	NS	NS
Methylene Chloride	4.6	0.68	5.0 U	5.0 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	NS	NS	NS	NS
Acrylonitrile	0.0572	0.0572	10 U	10 U	0.057 U	0.057 U	0.057 U	0.057 U	0.057 U	0.057 U	NS	NS	NS	NS
Methyl T-Butyl Ether (MTBE)	20		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Trans-1,2-Dichloroethene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,1-Dichloroethane	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Butanone (MEK)	4,800		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	NS	NS	NS

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	FFP-MW-3 EV14090091-01 EV14090107-24 9/16/2014	FFP-MW-3-Dup EV14090091-10 EV14090107-25 9/16/2014	FFP-MW-3 EV14120151-04 EV14120162-16 12/18/2014	FFP-MW-3-Dup EV14120151-09 EV14120162-20 12/18/2014	FFP-MW-3 EV15030154-01 3/26/2015	FFP-MW-3-Dup EV15030154-05 3/26/2015	FFP-MW-3 EV15060175-08 6/24/2015	FFP-MW-3-Dup EV15060175-02 6/24/2015	MW-6 EV14090107-01 9/17/2014	MW-6 EV14120162-07 12/19/2014	MW-6 EV15030127-08 3/24/2015	MW-6 EV15060175-07 6/24/2015
Cis-1,2-Dichloroethene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Hexane (k)	480		NA	NA	2.0 U	2.0 U	NA	NS	2.0 U	2.0 U	NS	NS	NS	NS
2,2-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Bromochloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,1,1-Trichloroethane	200		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,1-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,2-Dichloroethane	0.38	0.014	2.0 U	2.0 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	NS	NS	NS	NS
Benzene	1.2	0.028	2.0 U	2.0 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	NS	NS	NS	NS
Dibromomethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Bromodichloromethane	0.080	0.059	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	NS	NS	NS	NS
4-Methyl-2-Pentanone (MIBK)	640		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	NS	NS	NS
Toluene	640		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Cis-1,3-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Hexanone	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	NS	NS	NS
1,3-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Tetrachloroethene (PCE)	0.69	0.023	2.0 U	2.0 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	NS	NS	NS	NS
1,2-Dibromoethane (EDB)	0.01		0.01 U	0.01 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	NS	NS	NS	NS
Chlorobenzene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Ethylbenzene	70		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
m,p-Xylene (l)	1,600		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	NS	NS	NS	NS
Styrene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
o-Xylene	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Bromoform	4.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Isopropylbenzene (cumene)	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,2,3-Trichloropropane	0.023	0.023	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	NS	NS	NS	NS
Bromobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
N-Propyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,3,5-Trimethylbenzene	80		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
4-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
T-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,2,4-Trimethylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
S-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
P-Isopropyltoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,3 Dichlorobenzene	320		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,4-Dichlorobenzene	8.1		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
N-Butylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,2-Dichlorobenzene	420		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,2-Dibromo 3-Chloropropane	0.0997	0.0997	10 U	10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
Hexachlorobutadiene	0.44		2.0 U	2.0 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	NS	NS	NS	NS
1,2,3-Trichlorobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
VOCs (µg/L)														
Method EPA-8260SIM (m)														
Vinyl Chloride	0.031	0.031	0.20 U	0.20 U	0.031 U	0.031 U	0.031 U	0.031 U	0.031 U	0.031 U	NS	NS	NS	NS
Carbon Tetrachloride	0.23		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
Chloroform	1.4		0.10 U	0.10 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	NS	NS	NS	NS
Trichloroethene (TCE)	2.5		0.020 U	0.020 U	0.054 U	0.054 U	0.054 U	0.054 U	0.054 U	0.054 U	NS	NS	NS	NS
1,2-Dichloropropane	0.50		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
Trans-1,3-Dichloropropene	0.34		2.0 U	2.0 U	0.058 U	0.058 U	0.058 U	0.058 U	0.058 U	0.058 U	NS	NS	NS	NS
1,1,2-Trichloroethane	0.59		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
Dibromochloromethane	0.40		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
1,1,1,2-Tetrachloroethane	1.7		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
1,1,2,2-Tetrachloroethane	0.17		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
1,2,4-Trichlorobenzene	1.5		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	FFP-MW-3 EV14090091-01 EV14090107-24 9/16/2014	FFP-MW-3-Dup EV14090091-10 EV14090107-25 9/16/2014	FFP-MW-3 EV14120151-04 EV14120162-16 12/18/2014	FFP-MW-3-Dup EV14120151-09 EV14120162-20 12/18/2014	FFP-MW-3 EV15030154-01 3/26/2015	FFP-MW-3-Dup EV15030154-05 3/26/2015	FFP-MW-3 EV15060175-08 6/24/2015	FFP-MW-3-Dup EV15060175-02 6/24/2015	MW-6 EV14090107-01 9/17/2014	MW-6 EV14120162-07 12/19/2014	MW-6 EV15030127-08 3/24/2015	MW-6 EV15060175-07 6/24/2015
SVOCs (µg/L) Method EPA-8270														
Pyridine	8.0		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
N-Nitrosodimethylamine	1.51	1.51	1.5 U	1.5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	NS	NS	NS	NS
Phenol	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Aniline	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Bis(2-Chloroethyl)Ether	0.94	0.94	0.94 U	0.94 U	0.87 U	0.87 U	0.89 U	0.89 U	0.89 U	0.88 U	NS	NS	NS	NS
2-Chlorophenol	40		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Benzyl Alcohol	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Methylphenol	400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Bis(2-Chloroisopropyl)Ether	1,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
3&4-Methylphenol (n)	400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
N-Nitroso-Di-N-Propylamine	2.0	2.0	2.0 U	2.0 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	NS	NS	NS	NS
Hexachloroethane	2.0	2.0	2.0 U	2.0 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	NS	NS	NS	NS
Nitrobenzene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Isophorone	8.4		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2,4-Dimethylphenol	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Benzoic Acid	64,000		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	NS	NS	NS
Bis(2-Chloroethoxy)Methane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2,4-Dichlorophenol	24		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
4-Chloroaniline (p-Chloroaniline)	1.89	1.89	2.0 U	2.0 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	NS	NS	NS	NS
2,6-Dichlorophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
4-Chloro-3-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Hexachlorocyclopentadiene	40		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2,4,6-Trichlorophenol	1.4	0.90	2.0 U	2.0 U	0.83 U	0.83 U	0.85 U	0.85 U	0.85 U	0.84 U	NS	NS	NS	NS
2,4,5-Trichlorophenol	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Chloronaphthalene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Nitroaniline	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Dimethylphthalate	270,000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2,6-Dinitrotoluene	1.82	1.82	1.8 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	NS	NS	NS	NS
3-Nitroaniline	--		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NS	NS	NS	NS
2,4-Dinitrophenol	32		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	NS	NS	NS
4-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Dibenzofuran	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2,4-Dinitrotoluene	0.78	0.78	0.78 U	0.78 U	0.72 U	0.72 U	0.73 U	0.73 U	0.73 U	0.73 U	NS	NS	NS	NS
2,3,4,6-Tetrachlorophenol	480		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Diethylphthalate	13,000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
4-Chlorophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
4-Nitroaniline	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
4,6-Dinitro-2-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
N-Nitrosodiphenylamine	3.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Azobenzene	1.63	1.63	2.0 U	2.0 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	NS	NS	NS	NS
4-Bromophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Carbazole	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Di-N-Butylphthalate	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Butylbenzylphthalate	8.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
3,3'-Dichlorobenzidine	2.0	2.0	2.0 U	2.0 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	NS	NS	NS	NS
Bis(2-Ethylhexyl)Phthalate	1.2	0.81	2.1	2.0 U	0.75 U	0.75 U	0.76 U	0.76 U	0.76 U	0.76 U	NS	NS	NS	NS
Di-N-Octylphthalate	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Table 9 - Groundwater Analytical Results

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	FFP-MW-3 EV14090091-01 EV14090107-24 9/16/2014	FFP-MW-3-Dup EV14090091-10 EV14090107-25 9/16/2014	FFP-MW-3 EV14120151-04 EV14120162-16 12/18/2014	FFP-MW-3-Dup EV14120151-09 EV14120162-20 12/18/2014	FFP-MW-3 EV15030154-01 3/26/2015	FFP-MW-3-Dup EV15030154-05 3/26/2015	FFP-MW-3 EV15060175-08 6/24/2015	FFP-MW-3-Dup EV15060175-02 6/24/2015	MW-6 EV14090107-01 9/17/2014	MW-6 EV14120162-07 12/19/2014	MW-6 EV15030127-08 3/24/2015	MW-6 EV15060175-07 6/24/2015
PAHs (µg/L) Method EPA-8270 SIM														
Naphthalene	160		0.020 U	0.031	0.013 U	0.013 U	0.014 UJ	0.089 J	0.014 U	0.013 U	0.020 U	NS	NS	NS
2-Methylnaphthalene	32		0.020 U	0.020 U	0.020 U	0.020 U	0.02 U	0.02 U	0.020 U	0.020 U	0.020 U	NS	NS	NS
1-Methylnaphthalene	1.5		0.020 U	0.020 U	0.020 U	0.020 U	0.02 U	0.02 U	0.020 U	0.020 U	0.020 U	NS	NS	NS
Acenaphthylene	--		0.020 U	0.020 U	0.020 U	0.020 U	0.02 U	0.02 U	0.020 U	0.020 U	0.020 U	NS	NS	NS
Acenaphthene	650		0.020 U	0.020 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.020 U	NS	NS	NS
Fluorene	640		0.020 U	0.020 U	0.0090 U	0.0097	0.0092 U	0.0092 U	0.0092 U	0.0091 U	0.020 U	NS	NS	NS
Pentachlorophenol	0.23	0.23	0.13 U	0.13 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.13 U	NS	NS	NS
Phenanthrene	--		0.020 U	0.020 U	0.013 U	0.013 U	0.014 U	0.014 U	0.014 U	0.013 U	0.020 U	NS	NS	NS
Anthracene	4,800		0.020 U	0.020 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.020 U	NS	NS	NS
Fluoranthene	86		0.020 U	0.020 U	0.0092 U	0.0092 U	0.0093 U	0.0093 U	0.0093 U	0.0092 U	0.020 U	NS	NS	NS
Pyrene	480		0.020 U	0.020 U	0.010	0.014	0.011 U	0.011 U	0.011 U	0.011 U	0.020 U	NS	NS	NS
Benzo[A]Anthracene	0.00940	0.00940	0.020 U	0.020 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.020 U	NS	NS	NS
Chrysene	0.00940	0.00940	0.020 U	0.020 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.020 U	NS	NS	NS
Benzo[B]Fluoranthene	0.00730	0.00730	0.020 U	0.020 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.020 U	NS	NS	NS
Benzo[K]Fluoranthene	0.0237	0.0237	0.020 U	0.020 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.020 U	NS	NS	NS
Benzo[A]Pyrene	0.0104	0.0104	0.029 U	0.029 U	0.027 U	0.027 U	0.027 U	0.027 U	0.027 U	0.027 U	0.029 U	NS	NS	NS
Indeno[1,2,3-Cd]Pyrene	0.0164	0.0164	0.020 U	0.020 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.020 U	NS	NS	NS
Dibenz[A,H]Anthracene	0.0127	0.0127	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	NS	NS	NS
Benzo[G,H,I]Perylene	--		0.020 U	0.020 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.020 U	NS	NS	NS
cPAH TEQ (o)	0.10		ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Table 9 - Groundwater Analytical Results

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-7 EV14090091-06 EV14090107-02 9/16/2014	MW-7 EV14120119-04 EV14120162-25 12/16/2014	MW-7 EV15030162-01 6/25/2015	MW-7 EV15060188-06 6/25/2015	MW-8 EV14090091-05 EV14090107-03 9/16/2014	MW-8 EV14120162-11 12/19/2014	MW-8 EV15030143-06 3/25/2015	MW-8 EV15060188-05 6/25/2015	MW-9A EV14090080-01 EV14090107-04 9/15/2014	MW-9A EV14120143-01 EV14120162-23 12/17/2014	MW-9A EV15030162-02 3/26/2015	MW-9A EV15060175-01 6/24/2015
TOTAL PETROLEUM HYDROCARBONS (µg/L)														
HCID														
Gas Range	--		130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U
Diesel Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U
Oil Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U
NWTPH-G (c)	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx														
Diesel Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	1.3	2.8	2.6	1.8	3.7	0.68	1.5	4.1	1.1	0.67	0.45 U	1.1
Barium	1,000		28	52	52	33	77	64	65	54	8.5	4.9	11	8.3
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		23,000	37,000	34,000	29,000	31,000	38,000	43,000	33,000	21,000	14,000	27,000	23,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	10 UJ	NS	NS	NS	10 U	NS	NS	NS
Iron	300		6800	23,000	17,000	11,000	14,000	7700	5900	24,000	50 U	50 U	50 U	50 U
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U
Magnesium	--		7900	13,000	12,000	10,000	13,000	17,000	19,000	13,000	6600	4600	9100	7600
Manganese	50		1600	1900	1400	1400	1900	2000	2200	1800	2.0 U	2.0 U	2.0 U	2.0 U
Potassium	--		NS	NS	8700	7800	NS	NS	20,000	8000	NS	NS	3600	3400
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		13,000	19,000	18,000	14,000	25,000	28,000	30,000	20,000	11,000	9400	14,000	13,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
TOTAL METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	1.7	2.6	2.0	1.4	4.8	1.2	1.6	3.3	1.0 U	0.97	0.45 U	0.86 U
Barium	1,000		30	49	52	34	98	65	63	54	8.5	5.1	10	8.1
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		23,000	37,000	33,000	29,000	32,000	39,000	42,000	33,000	20,000	14,000	26,000	22,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	10 UJ	NS	NS	NS	10 U	NS	NS	NS
Iron	300		7100	22,000	17,000	11,000	17,000	6300	5200	23,000	50 U	50 U	50 U	50 U
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	2.1	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.32 U
Magnesium	--		8000	13,000	12,000	10,000	14,000	18,000	19,000	13,000	6600	4400	8800	6700
Manganese	50		1700	2000	1400	1300	2000	2000	2200	1800	2.0 U	2.0 U	2.0 U	2.0 U
Potassium	--		NS	NS	8500	7900	NS	NS	20,000	7700	NS	NS	3400	3100
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		13,000	19,000	18,000	15,000	26,000	28,000	30,000	20,000	11,000	9000	13,000	11,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
CONVENTIONALS (mg/L)														
Total Dissolved Solids (SM2540C)	--		130	240	210	170	230	300	290	240	170 J	100	180	140
Chloride (EPA-300.0)	230		12	19	17	14	18	21	24	16	8.8	6.0	12	12
Fluoride (EPA-300.0)	0.64		0.25	0.39	0.16 U	0.16 U	0.23	0.26	0.19	0.16 U	0.41	0.32	0.16 U	0.16 U
Nitrate as N (EPA-300.0)	10		0.39	0.35	4.1	0.061	0.034 U	0.44	27	0.047	3.3	0.53	2.0	4.0
Nitrite as N (EPA-300.0)	1.0		0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U
Sulfate (EPA-300.0)	--		1.8	0.26 U	0.67	1.1	0.41	0.82	1.2	0.26 U	10	6.4	11	12
Ammonia (EPA-350.1)	--		2.8	5.0	4.1 J	2.9	8.4	8.9	11	4.4	0.060	0.050 U	0.050 U	0.050 U
Alkalinity as CaCO3, Total (SM2320B)	--		140	220	170	170	250	260	260	200	88	67	110	85
Bicarbonate as CaCO3 (SM2320B)	--		140	220	170	170	250	260	260	200	88	67	110	85
Total Organic Carbon (TOC) (SM5310C)	--		3.2	4.2	4.1	3.8	8.0	4.5	3.8	4.3	1.6	1.0	0.83	1.3

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-7 EV14090091-06 EV14090107-02 9/16/2014	MW-7 EV14120119-04 EV14120162-25 12/16/2014	MW-7 EV15030162-01 3/26/2015	MW-7 EV15060188-06 6/25/2015	MW-8 EV14090091-05 EV14090107-03 9/16/2014	MW-8 EV14120162-11 12/19/2014	MW-8 EV15030143-06 3/25/2015	MW-8 EV15060188-05 6/25/2015	MW-9A EV14090080-01 EV14090107-04 9/15/2014	MW-9A EV14120143-01 EV14120162-23 12/17/2014	MW-9A EV15030162-02 3/26/2015	MW-9A EV15060175-01 6/24/2015
FIELD PARAMETERS														
Temperature (°C)	--		18.02	14.20	15.41	19.17	17.93	15.88	14.45	17.3	16.96	15.26	14.97	16.53
Specific Conductivity (uS/cm)	--		224	366	520	554	495	698	734	449	248	131	332	199
Dissolved Oxygen (mg/L)	--		1.40	1.78	0.54	0.49	0.50	0.34	0.10	0.14	6.20	4.60	3.15	8.85
pH (S.U.)	6.5 to 8.5		5.84	6.39	6.20	6.14	5.95	7 (f)	6.46	6.51	9.76	9.10	6.40	6.46
Oxidation Reduction Potential (mV)	--		29.2	-44.1	-34.2	5.2	-64.6	-13.0	-76.9	-109.8	-259.3	39.7	-8.9	74.9
Turbidity (NTU)	--		13.3	4.07	3.05	1.03	45.6	2.46	1.69	4.77	7.15	0.49	1.18	0.40
PESTICIDES (µg/L)														
Method EPA-8081														
hexachlorocyclohexane, alpha (A-BHC)	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
G-BHC (Lindane)	0.019	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
hexachlorocyclohexane; beta (B-BHC)	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
Heptachlor	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
hexachlorocyclohexane, delta (D-BHC)	0.012	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
Aldrin	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
Heptachlor Epoxide	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
Chlordane	0.20	0.20	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
Endosulfan I (g)	0.056		0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
4,4'-DDE	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
Dieldrin	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
Endrin	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
4,4'-DDD	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
Endosulfan II (g)	0.056		0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.012	0.010 U
4,4'-DDT	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
Endrin Aldehyde (h)	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
Endosulfan Sulfate (g)	0.056		0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
Methoxychlor	0.030	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.01 U	0.010 U	0.011 U	0.010 U
Hexachlorobenzene (i)	0.01	0.01	2.0 U	0.011 U	0.010 U	0.010 U	2.0 U	0.011 U	0.011 U	0.010 U	2.0 U	0.010 U	0.011 U	0.010 U
Toxaphene	0.50	0.50	0.52 U	0.52 U	0.50 U	0.50 U	0.51 U	0.53 U	0.52 U	0.50 U	0.50 U	0.50 U	0.51 U	0.50 U
PCBs (µg/L)														
Method EPA-8082														
PCB-1016	0.005	0.005	0.0052 U	0.0052 U	0.0050 U	0.0050 U	0.022 U	0.0053 U	0.0052 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0050 U
PCB-1221	--		0.011 U	0.011 U	0.010 U	0.010 U	0.017 U	0.011 U	0.023 U	0.010 U	0.01 U	0.010 U	0.011 U	0.014 U
PCB-1232	--		0.0052 U	0.0052 U	0.0050 U	0.0097	0.047 U	0.0053 U	0.026 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0050 U
PCB-1242	--		0.0052 U	0.040	0.026	0.0050 U	0.028 U	0.010	0.011 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0050 U
PCB-1248	--		0.0052 U	0.0052 U	0.0050 U	0.0050 U	0.012 U	0.0053 U	0.0064 U	0.020	0.0050 U	0.0050 U	0.0051 U	0.0050 U
PCB-1254	0.005	0.005	0.0052 U	0.0052 U	0.0050 U	0.0050 U	0.017 U	0.0053 U	0.0052 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0050 U
PCB-1260	0.014	0.005	0.0052 U	0.0052 U	0.0050 U	0.0050 U	0.0051 U	0.0053 U	0.0052 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0050 U
Total PCBs (j)	0.10		ND	0.040	0.026	0.0097	ND	0.010	ND	0.020	ND	ND	ND	ND
VOCs (µg/L)														
Method EPA-8260														
Dichlorodifluoromethane	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	11		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Disulfide	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	7,200		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
1,1-Dichloroethene	0.057	0.014	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U
Methylene Chloride	4.6	0.68	5.0 U	0.68 U	0.68 U	0.68 U	5.0 U	0.68 U	0.68 U	0.68 U	5.0 U	0.68 U	0.68 U	0.68 U
Acrylonitrile	0.0572	0.0572	10 U	0.057 U	0.057 U	0.057 U	10 U	0.057 U	0.057 U	0.057 U	10 U	0.057 U	0.057 U	0.057 U
Methyl T-Butyl Ether (MTBE)	20		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trans-1,2-Dichloroethene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Butanone (MEK)	4,800		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-7 EV14090091-06 EV14090107-02 9/16/2014	MW-7 EV14120119-04 EV14120162-25 12/16/2014	MW-7 EV15030162-01 3/26/2015	MW-7 EV15060188-06 6/25/2015	MW-8 EV14090091-05 EV14090107-03 9/16/2014	MW-8 EV14120162-11 12/19/2014	MW-8 EV15030143-06 3/25/2015	MW-8 EV15060188-05 6/25/2015	MW-9A EV14090080-01 EV14090107-04 9/15/2014	MW-9A EV14120143-01 EV14120162-23 12/17/2014	MW-9A EV15030162-02 3/26/2015	MW-9A EV15060175-01 6/24/2015
Cis-1,2-Dichloroethene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexane (k)	480		NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U
2,2-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromochloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	200		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	0.38	0.014	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U
Benzene	1.2	0.028	2.0 U	0.028 U	0.028 U	0.028 U	2.0 U	0.028 U	0.028 U	0.028 U	2.0 U	0.028 U	0.028 U	0.028 U
Dibromomethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	0.080	0.059	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U
4-Methyl-2-Pentanone (MIBK)	640		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	640		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Cis-1,3-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene (PCE)	0.69	0.023	2.0 U	0.023 U	0.023 U	0.023 U	2.0 U	0.023 U	0.023 U	0.023 U	2.0 U	0.023 U	0.023 U	0.023 U
1,2-Dibromoethane (EDB)	0.01		0.01 U	0.010 U	0.010 U	0.010 U	0.01 U	0.010 U	0.010 U	0.010 U	0.01 U	0.010 U	0.010 U	0.010 U
Chlorobenzene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	70		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m,p-Xylene (l)	1,600		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Styrene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	4.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene (cumene)	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichloropropane	0.023	0.023	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U
Bromobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Propyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	80		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
T-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
S-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
P-Isopropyltoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3 Dichlorobenzene	320		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	8.1		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Butylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	420		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo 3-Chloropropane	0.0997	0.0997	10 U	0.10 U	0.10 U	0.10 U	10 U	0.10 U	0.10 U	0.10 U	10 U	0.10 U	0.10 U	0.10 U
Hexachlorobutadiene	0.44		2.0 U	0.069 U	0.069 U	0.069 U	2.0 U	0.069 U	0.069 U	0.069 U	2.0 U	0.069 U	0.069 U	0.069 U
1,2,3-Trichlorobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
VOCs (µg/L)														
Method EPA-8260SIM (m)														
Vinyl Chloride	0.031	0.031	0.20 U	0.031 U	0.031 U	0.031 U	0.20 U	0.031 U	0.031 U	0.031 U	0.20 U	0.031 U	0.031 U	0.031 U
Carbon Tetrachloride	0.23		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chloroform	1.4		0.10 U	0.14 U	0.14 U	0.14 U	0.10 U	0.14 U	0.14 U	0.14 U	1.7	2.2	2.5	0.14 U
Trichloroethene (TCE)	2.5		0.020 U	0.054 U	0.054 U	0.054 U	0.020 U	0.054 U	0.054 U	0.054 U	0.020 U	0.054 U	0.054 U	0.054 U
1,2-Dichloropropane	0.50		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Trans-1,3-Dichloropropene	0.34		2.0 U	0.058 U	0.058 U	0.058 U	2.0 U	0.058 U	0.058 U	0.058 U	2.0 U	0.058 U	0.058 U	0.058 U
1,1,2-Trichloroethane	0.59		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibromochloromethane	0.40		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,1,1,2-Tetrachloroethane	1.7		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,1,2,2-Tetrachloroethane	0.17		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,2,4-Trichlorobenzene	1.5		0.17	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-7 EV14090091-06 EV14090107-02 9/16/2014	MW-7 EV14120119-04 EV14120162-25 12/16/2014	MW-7 EV15030162-01 3/26/2015	MW-7 EV15060188-06 6/25/2015	MW-8 EV14090091-05 EV14090107-03 9/16/2014	MW-8 EV14120162-11 12/19/2014	MW-8 EV15030143-06 3/25/2015	MW-8 EV15060188-05 6/25/2015	MW-9A EV14090080-01 EV14090107-04 9/15/2014	MW-9A EV14120143-01 EV14120162-23 12/17/2014	MW-9A EV15030162-02 3/26/2015	MW-9A EV15060175-01 6/24/2015
SVOCs (µg/L)														
Method EPA-8270														
Pyridine	8.0		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodimethylamine	1.51	1.51	1.5 U	1.4 U	1.5 U	1.4 UJ	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.5 U	1.4 U
Phenol	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Aniline	7.7		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bis(2-Chloroethyl)Ether	0.94	0.94	0.94 U	0.87 U	0.94 U	0.88 UJ	0.94 U	0.87 U	0.87 U	0.88 U	0.94 U	0.87 U	0.94 U	0.87 U
2-Chlorophenol	40		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzyl Alcohol	800		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Methylphenol	400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bis(2-Chloroisopropyl)Ether	1,400		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
3&4-Methylphenol (n)	400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitroso-Di-N-Propylamine	2.0	2.0	2.0 U	1.9 U	2.0 U	1.9 UJ	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	2.0 U	1.9 U
Hexachloroethane	2.0	2.0	2.0 U	1.9 U	2.0 U	1.9 UJ	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	2.0 U	1.9 U
Nitrobenzene	16		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Isophorone	8.4		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dimethylphenol	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzoic Acid	64,000		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-Chloroethoxy)Methane	--		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dichlorophenol	24		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloroaniline (p-Chloroaniline)	1.89	1.89	2.0 U	1.8 U	1.9 U	1.8 UJ	2.0 U	1.8 U	1.8 U	1.8 U	2.0 U	1.8 U	1.9 U	1.8 U
2,6-Dichlorophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloro-3-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorocyclopentadiene	40		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4,6-Trichlorophenol	1.4	0.90	2.0 U	0.83 U	0.90 U	0.84 U	2.0 U	0.83 U	0.83 U	0.84 U	2.0 U	0.83 U	0.90 U	0.83 U
2,4,5-Trichlorophenol	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chloronaphthalene	--		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Nitroaniline	160		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dimethylphthalate	270,000		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,6-Dinitrotoluene	1.82	1.82	1.8 U	1.7 U	1.8 U	1.7 UJ	1.8 U	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U	1.8 U	1.7 U
3-Nitroaniline	--		5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2,4-Dinitrophenol	32		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibenzofuran	16		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dinitrotoluene	0.78	0.78	0.78 U	0.72 U	0.78 U	0.73 UJ	0.78 U	0.72 U	0.72 U	0.73 U	0.78 U	0.72 U	0.78 U	0.72 U
2,3,4,6-Tetrachlorophenol	480		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Diethylphthalate	13,000		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Nitroaniline	--		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4,6-Dinitro-2-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodiphenylamine	3.3		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Azobenzene	1.63	1.63	2.0 U	1.5 U	1.6 U	1.5 UJ	2.0 U	1.5 U	1.5 U	1.5 U	2.0 U	1.5 U	1.6 U	1.5 U
4-Bromophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbazole	--		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Di-N-Butylphthalate	1,600		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Butylbenzylphthalate	8.3		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
3,3'-Dichlorobenzidine	2.0	2.0	2.0 U	1.9 U	2.0 U	1.9 UJ	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	2.0 U	1.9 U
Bis(2-Ethylhexyl)Phthalate	1.2	0.81	2.0 U	0.75 U	0.81 U	0.75 UJ	10	49	0.75 U	0.75 U	2.0 U	0.75 U	0.81 U	0.75 U
Di-N-Octylphthalate	160		2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-7 EV14090091-06 EV14090107-02 9/16/2014	MW-7 EV14120119-04 EV14120162-25 12/16/2014	MW-7 EV15030162-01 3/26/2015	MW-7 EV15060188-06 6/25/2015	MW-8 EV14090091-05 EV14090107-03 9/16/2014	MW-8 EV14120162-11 12/19/2014	MW-8 EV15030143-06 3/25/2015	MW-8 EV15060188-05 6/25/2015	MW-9A EV14090080-01 EV14090107-04 9/15/2014	MW-9A EV14120143-01 EV14120162-23 12/17/2014	MW-9A EV15030162-02 3/26/2015	MW-9A EV15060175-01 6/24/2015
PAHs (µg/L) Method EPA-8270 SIM														
Naphthalene	160		0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U
2-Methylnaphthalene	32		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U
1-Methylnaphthalene	1.5		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U
Acenaphthylene	--		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U
Acenaphthene	650		0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U
Fluorene	640		0.020 U	0.0090 U	0.0090 U	0.0091 U	0.020 U	0.0090 U	0.0096	0.0091 U	0.020 U	0.0092	0.0090 U	0.0090 U
Pentachlorophenol	0.23	0.23	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U
Phenanthrene	--		0.020 U	0.013 U	0.015	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U
Anthracene	4,800		0.020 U	0.01 U	0.017	0.01 U	0.020 U	0.01 U	0.01 U	0.01 U	0.020 U	0.01 U	0.01 U	0.01 U
Fluoranthene	86		0.020 U	0.0092 U	0.0092 U	0.0092 U	0.020 U	0.0092 U	0.0092 U	0.0092 U	0.020 U	0.0092 U	0.0092 U	0.0092 U
Pyrene	480		0.020 U	0.011	0.01 U	0.011 U	0.020 U	0.01 U	0.01 U	0.011 U	0.020 U	0.01 U	0.01 U	0.01 U
Benzo[A]Anthracene	0.00940	0.00940	0.020 U	0.017 U	0.017 U	0.017 U	0.020 U	0.017 U	0.017 U	0.017 U	0.020 U	0.017 U	0.017 U	0.017 U
Chrysene	0.00940	0.00940	0.020 U	0.018 U	0.018 U	0.018 U	0.020 U	0.018 U	0.018 U	0.018 U	0.020 U	0.018 U	0.018 U	0.018 U
Benzo[B]Fluoranthene	0.00730	0.00730	0.020 U	0.0068 U	0.0068 U	0.0068 U	0.020 U	0.0068 U	0.0068 U	0.0068 U	0.020 U	0.0068 U	0.0068 U	0.0068 U
Benzo[K]Fluoranthene	0.0237	0.0237	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U
Benzo[A]Pyrene	0.0104	0.0104	0.029 U	0.027 U	0.027 U	0.027 U	0.029 U	0.027 U	0.027 U	0.027 U	0.029 U	0.027 U	0.027 U	0.027 U
Indeno[1,2,3-Cd]Pyrene	0.0164	0.0164	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U
Dibenz[A,H]Anthracene	0.0127	0.0127	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U
Benzo[G,H,I]Perylene	--		0.020 U	0.019 U	0.019 U	0.019 U	0.020 U	0.019 U	0.019 U	0.019 U	0.020 U	0.019 U	0.019 U	0.019 U
cPAH TEQ (o)	0.10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-11 EV14090080-03 EV14090107-05 9/15/2014	MW-11 EV14120162-09 12/19/2014	MW-11 EV15030154-02 3/26/2015	MW-11 EV15060175-10 6/24/2015	MW-12 EV14090080-05 EV14090107-06 9/15/2014	MW-12 EV14120151-01 EV14120162-17 12/18/2014	MW-12 EV15030143-03 3/25/2015	MW-12 EV15060181-02 6/25/2015	MW-14 EV14090107-07 9/17/2014	MW-14 EV14120151-06 EV14120162-19 12/18/2014	MW-14 EV15030127-01 3/23/2015	MW-14 EV15060161-01 6/23/2015
TOTAL PETROLEUM HYDROCARBONS (µg/L)														
HCID														
Gas Range	--		130 U	130 U	130 U	130 U	130 U	130	NA	NA	130 U	130 U	130 U	130 U
Diesel Range	--		310 U	310 U	310 U	310 U	>310	310	NA	NA	310 U	310 U	310 U	310 U
Oil Range	--		310 U	310 U	310 U	310 U	310 U	>310	NA	NA	310 U	310 U	310 U	310 U
NWTPH-G (c)	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx														
Diesel Range (w/SGC)	500		NA	NA	NA	NA	1200	390 J	310 J	360	NA	NA	NA	NA
Diesel Range (wo/SGC)	500		NA	NA	NA	NA	3700	990 J	130 U	940	NA	NA	NA	NA
Oil Range (w/SGC)	500		NA	NA	NA	NA	370	980	650	250	NA	NA	NA	NA
Oil Range (wo/SGC)	500		NA	NA	NA	NA	1400	1100	3100	560	NA	NA	NA	NA
DISSOLVED METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	3.6	4.1	3.7	2.5	1.2	0.45 U	2.3	0.45 U	1.0 U	0.45 U	0.45 U	0.45 U
Barium	1,000		46	54	49	51	59	47	69	70	6.0	4.9	3.4	6.1
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		34,000	38,000	35,000	37,000	40,000	40,000	65,000	57,000	13,000	13,000	11,000	14,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	10 U	NS	NS	NS	NS	NS	NS	NS
Iron	300		29,000	32,000	29,000	31,000	13,000	11,000	3100	21,000	50 U	50 U	50 U	50 U
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U
Magnesium	--		11,000	13,000	12,000	13,000	13,000	14,000	23,000	20,000	4500	4600	3900	5000
Manganese	50		2000	1900	1700	2000	1800	1700	2500	2800	2.0 U	2.9	2.0 U	2.0 U
Potassium	--		NS	NS	5600	5500	NS	NS	6900	5700	NS	NS	1300	1700
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		16,000	19,000	18,000	18,000	69,000	43,000	77,000	57,000	5700	5100	6200	5900
Mercury	0.11	0.11	0.20 U	0.11 U	0.20 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
TOTAL METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	3.7	3.9	4.6	2.8	1.3	0.45 U	1.1	0.45 U	1.0 U	0.45 U	0.45 U	0.45 U
Barium	1,000		52	52	49	50	70	45	69	74	5.7	5.0	4.3	6.5
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		36,000	38,000	35,000	37,000	45,000	39,000	65,000	59,000	13,000	13,000	11,000	14,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	10 U	NS	NS	NS	NS	NS	NS	NS
Iron	300		30,000	31,000	29,000	31,000	14,000	10,000	1600	22,000	50 U	50 U	70	50 U
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U
Magnesium	--		12,000	13,000	12,000	13,000	15,000	14,000	23,000	21,000	4500	4800	3900	4800
Manganese	50		2100	1900	1700	1800	2100	1700	2300	2800	5.6	3.8	3.7	2.6
Potassium	--		NS	NS	5600	5400	NS	NS	7000	5900	NS	NS	1300	1700
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		16,000	19,000	18,000	18,000	80,000	44,000	79,000	60,000	5800	5400	6300	5700
Mercury	0.11	0.11	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
CONVENTIONALS (mg/L)														
Total Dissolved Solids (SM2540C)	--		210 J	240	220	250	370 J	290	520	340	NS	72	66	140
Chloride (EPA-300.0)	230		16	20	20	18	18	18	15	15	4.5	3.7	4.8	6.2
Fluoride (EPA-300.0)	0.64		0.16 U	0.22	0.16 U	0.16 U	0.44	0.39	0.48	0.29	0.16 U	0.16 U	0.16 U	0.16 U
Nitrate as N (EPA-300.0)	10		0.045	0.034 U	0.034 U	0.034 U	0.034 U	0.041	0.23	0.034 U	0.20 J	0.22	0.49	0.25
Nitrite as N (EPA-300.0)	1.0		0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 UJ	0.043 U	0.043 U	0.043 U
Sulfate (EPA-300.0)	--		0.26 U	0.29	0.26 U	0.50 U	18	0.35	45	11	3.0	3.3	4.5	3.8
Ammonia (EPA-350.1)	--		1.3	1.3	0.97	0.91	1.5	1.4	1.0	1.0	NS	0.050 U	0.050 U	0.050 U
Alkalinity as CaCO3, Total (SM2320B)	--		190	180	170	180	350	260	380	380	NS	58	47	63
Bicarbonate as CaCO3 (SM2320B)	--		190	180	170	180	350	260	380	380	NS	58	47	63
Total Organic Carbon (TOC) (SM5310C)	--		5.0	4.0	4.1	5.2	16	7.0	13	12	NS	0.72	0.77	0.88

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-11 EV14090080-03 EV14090107-05 9/15/2014	MW-11 EV14120162-09 12/19/2014	MW-11 EV15030154-02 3/26/2015	MW-11 EV15060175-10 6/24/2015	MW-12 EV14090080-05 EV14090107-06 9/15/2014	MW-12 EV14120151-01 EV14120162-17 12/18/2014	MW-12 EV15030143-03 3/25/2015	MW-12 EV15060181-02 6/25/2015	MW-14 EV14090107-07 9/17/2014	MW-14 EV14120151-06 EV14120162-19 12/18/2014	MW-14 EV15030127-01 3/23/2015	MW-14 EV15060161-01 6/23/2015
FIELD PARAMETERS														
Temperature (°C)	--		16.50	15.30	15.63	16.34	19.81	16.54	14.14	17.81	17.46	9.93	7.25	13.96
Specific Conductivity (uS/cm)	--		384	558	533	399	1251	683	1719	1352	305	131	166	111
Dissolved Oxygen (mg/L)	--		0.68	0.31	0.34	0.84	1.09	0.35	1.28	1.19	1.10	3.84	9.10	2.44
pH (S.U.)	6.5 to 8.5		5.46	7 (f)	6.33	6.32	7.23	7 (f)	6.17	6.03	6.59	6 (f)	7.05	6.63
Oxidation Reduction Potential (mV)	--		53.8	-61.7	53.7	-69.2	-353.33	-71.7	-50.3	-59.0	-84.2	37.7	134.3	39.1
Turbidity (NTU)	--		6.51	3.44	0.86	1.20	4.20	4.28	10.7	2.27	7.06	1.93	1.16	0.50
PESTICIDES (µg/L)														
Method EPA-8081														
hexachlorocyclohexane, alpha (A-BHC)	0.01	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
G-BHC (Lindane)	0.019	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
hexachlorocyclohexane; beta (B-BHC)	0.01	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
Heptachlor	0.01	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
hexachlorocyclohexane, delta (D-BHC)	0.012	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
Aldrin	0.01	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
Heptachlor Epoxide	0.01	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.018 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
Chlordane	0.20	0.20	0.011 U	0.010 U	0.010 UJ	0.010 U	0.047 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
Endosulfan I (g)	0.056		0.011 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
4,4'-DDE	0.01	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
Dieldrin	0.01	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
Endrin	0.01	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
4,4'-DDD	0.01	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
Endosulfan II (g)	0.056		0.012 U	0.017 U	0.011 J	0.014	0.056 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
4,4'-DDT	0.01	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.13 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
Endrin Aldehyde (h)	0.01	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.071 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
Endosulfan Sulfate (g)	0.056		0.011 U	0.010 U	0.010 UJ	0.010 U	0.023 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
Methoxychlor	0.030	0.01	0.011 U	0.010 U	0.010 UJ	0.010 U	0.040 U	0.011 U	0.017 U	0.010 U	NS	NS	NS	NS
Hexachlorobenzene (i)	0.01	0.01	2.0 U	0.010 U	0.010 UJ	0.010 U	2.0 U	0.011 U	0.011 U	0.010 U	NS	NS	NS	NS
Toxaphene	0.50	0.50	0.51 U	0.50 U	0.50 UJ	0.50 U	2.5 U	0.52 U	0.53 U	0.50 U	NS	NS	NS	NS
PCBs (µg/L)														
Method EPA-8082														
PCB-1016	0.005	0.005	0.0051 U	0.0050 U	0.0050 U	0.0050 U	0.0064 U	0.0051 U	0.0053 U	0.0050 U	NS	NS	0.0050 U	0.0050 U
PCB-1221	--		0.011 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	NS	NS	0.010 U	0.010 U
PCB-1232	--		0.0051 U	0.0050 U	0.0050 U	0.0050 U	0.0056 U	0.0051 U	0.0053 U	0.0050 U	NS	NS	0.0050 U	0.0050 U
PCB-1242	--		0.0051 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0051 U	0.0053 U	0.0050 U	NS	NS	0.0050 U	0.0050 U
PCB-1248	--		0.0051 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0051 U	0.0073 U	0.0050 U	NS	NS	0.0050 U	0.0050 U
PCB-1254	0.005	0.005	0.0051 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0051 U	0.0053 U	0.0050 U	NS	NS	0.0050 U	0.0050 U
PCB-1260	0.014	0.005	0.0051 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0051 U	0.0053 U	0.0050 U	NS	NS	0.0050 U	0.0050 U
Total PCBs (j)	0.10		ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND
VOCs (µg/L)														
Method EPA-8260														
Dichlorodifluoromethane	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Chloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Bromomethane	11		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Chloroethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Trichlorofluoromethane	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Carbon Disulfide	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Acetone	7,200		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NS	NS	NS	NS
1,1-Dichloroethene	0.057	0.014	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U	NS	NS	NS	NS
Methylene Chloride	4.6	0.68	5.0 U	0.68 U	0.68 U	0.68 U	5.0 U	0.68 U	0.68 U	0.68 U	NS	NS	NS	NS
Acrylonitrile	0.0572	0.0572	10 U	0.057 U	0.057 U	0.057 U	10 U	0.057 U	0.057 U	0.057 U	NS	NS	NS	NS
Methyl T-Butyl Ether (MTBE)	20		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Trans-1,2-Dichloroethene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,1-Dichloroethane	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Butanone (MEK)	4,800		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	NS	NS	NS

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-11 EV14090080-03 EV14090107-05 9/15/2014	MW-11 EV14120162-09 12/19/2014	MW-11 EV15030154-02 3/26/2015	MW-11 EV15060175-10 6/24/2015	MW-12 EV14090080-05 EV14090107-06 9/15/2014	MW-12 EV14120151-01 EV14120162-17 12/18/2014	MW-12 EV15030143-03 3/25/2015	MW-12 EV15060181-02 6/25/2015	MW-14 EV14090107-07 9/17/2014	MW-14 EV14120151-06 EV14120162-19 12/18/2014	MW-14 EV15030127-01 3/23/2015	MW-14 EV15060161-01 6/23/2015
Cis-1,2-Dichloroethene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Hexane (k)	480		NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NS	NS	NS	NS
2,2-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Bromochloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,1,1-Trichloroethane	200		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,1-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,2-Dichloroethane	0.38	0.014	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U	NS	NS	NS	NS
Benzene	1.2	0.028	2.0 U	0.028 U	0.028 U	0.028 U	2.0 U	0.028 U	0.028 U	0.028 U	NS	NS	NS	NS
Dibromomethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Bromodichloromethane	0.080	0.059	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	NS	NS	NS	NS
4-Methyl-2-Pentanone (MIBK)	640		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	NS	NS	NS
Toluene	640		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Cis-1,3-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Hexanone	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	NS	NS	NS
1,3-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Tetrachloroethene (PCE)	0.69	0.023	2.0 U	0.023 U	0.023 U	0.023 U	2.0 U	0.023 U	0.023 U	0.023 U	NS	NS	NS	NS
1,2-Dibromoethane (EDB)	0.01		0.01 U	0.010 U	0.010 U	0.010 U	0.01 U	0.010 U	0.010 U	0.010 U	NS	NS	NS	NS
Chlorobenzene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Ethylbenzene	70		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
m,p-Xylene (l)	1,600		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	NS	NS	NS	NS
Styrene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
o-Xylene	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Bromoform	4.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Isopropylbenzene (cumene)	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,2,3-Trichloropropane	0.023	0.023	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	NS	NS	NS	NS
Bromobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
N-Propyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,3,5-Trimethylbenzene	80		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
4-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
T-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,2,4-Trimethylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
S-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
P-Isopropyltoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,3 Dichlorobenzene	320		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,4-Dichlorobenzene	8.1		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
N-Butylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,2-Dichlorobenzene	420		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
1,2-Dibromo 3-Chloropropane	0.0997	0.0997	10 U	0.10 U	0.10 U	0.10 U	10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
Hexachlorobutadiene	0.44		2.0 U	0.069 U	0.069 U	0.069 U	2.0 U	0.069 U	0.069 U	0.069 U	NS	NS	NS	NS
1,2,3-Trichlorobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
VOCs (µg/L)														
Method EPA-8260SIM (m)														
Vinyl Chloride	0.031	0.031	0.20 U	0.031 U	0.031 U	0.031 U	0.20 U	0.031 U	0.031 U	0.031 U	NS	NS	NS	NS
Carbon Tetrachloride	0.23		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
Chloroform	1.4		0.10 U	0.14 U	0.14 U	0.14 U	0.10 U	0.14 U	0.14 U	0.14 U	NS	NS	NS	NS
Trichloroethene (TCE)	2.5		0.020 U	0.054 U	0.054 U	0.054 U	0.020 U	0.054 U	0.054 U	0.054 U	NS	NS	NS	NS
1,2-Dichloropropane	0.50		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
Trans-1,3-Dichloropropene	0.34		2.0 U	0.058 U	0.058 U	0.058 U	2.0 U	0.058 U	0.058 U	0.058 U	NS	NS	NS	NS
1,1,2-Trichloroethane	0.59		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
Dibromochloromethane	0.40		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
1,1,1,2-Tetrachloroethane	1.7		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
1,1,2,2-Tetrachloroethane	0.17		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS
1,2,4-Trichlorobenzene	1.5		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-11 EV14090080-03 EV14090107-05 9/15/2014	MW-11 EV14120162-09 12/19/2014	MW-11 EV15030154-02 3/26/2015	MW-11 EV15060175-10 6/24/2015	MW-12 EV14090080-05 EV14090107-06 9/15/2014	MW-12 EV14120151-01 EV14120162-17 12/18/2014	MW-12 EV15030143-03 3/25/2015	MW-12 EV15060181-02 6/25/2015	MW-14 EV14090107-07 9/17/2014	MW-14 EV14120151-06 EV14120162-19 12/18/2014	MW-14 EV15030127-01 3/23/2015	MW-14 EV15060161-01 6/23/2015
SVOCs (µg/L) Method EPA-8270														
Pyridine	8.0		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.0 U	NS	NS	NS	NS
N-Nitrosodimethylamine	1.51	1.51	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.5 U	1.4 U	NS	NS	NS	NS
Phenol	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Aniline	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.0 U	NS	NS	NS	NS
Bis(2-Chloroethyl)Ether	0.94	0.94	0.94 U	0.87 U	0.87 U	0.89 U	0.94 U	0.87 U	0.96 U	0.89 U	NS	NS	NS	NS
2-Chlorophenol	40		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Benzyl Alcohol	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Methylphenol	400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Bis(2-Chloroisopropyl)Ether	1,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
3&4-Methylphenol (n)	400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
N-Nitroso-Di-N-Propylamine	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	2.1 U	1.9 U	NS	NS	NS	NS
Hexachloroethane	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	2.1 U	1.9 U	NS	NS	NS	NS
Nitrobenzene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Isophorone	8.4		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2,4-Dimethylphenol	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Benzoic Acid	64,000		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	NS	NS	NS
Bis(2-Chloroethoxy)Methane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2,4-Dichlorophenol	24		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
4-Chloroaniline (p-Chloroaniline)	1.89	1.89	2.0 U	1.8 U	1.8 U	1.8 U	2.0 U	1.8 U	1.9 U	1.8 U	NS	NS	NS	NS
2,6-Dichlorophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
4-Chloro-3-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Hexachlorocyclopentadiene	40		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.0 U	NS	NS	NS	NS
2,4,6-Trichlorophenol	1.4	0.90	2.0 U	0.83 U	0.83 U	0.85 U	2.0 U	0.83 U	0.92 U	0.85 U	NS	NS	NS	NS
2,4,5-Trichlorophenol	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Chloronaphthalene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2-Nitroaniline	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Dimethylphthalate	270,000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2,6-Dinitrotoluene	1.82	1.82	1.8 U	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U	1.9 U	1.7 U	NS	NS	NS	NS
3-Nitroaniline	--		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NS	NS	NS	NS
2,4-Dinitrophenol	32		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	NS	NS	NS
4-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.0 U	NS	NS	NS	NS
Dibenzofuran	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
2,4-Dinitrotoluene	0.78	0.78	0.78 U	0.72 U	0.72 U	0.73 U	0.78 U	0.72 U	0.80 U	0.73 U	NS	NS	NS	NS
2,3,4,6-Tetrachlorophenol	480		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Diethylphthalate	13,000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
4-Chlorophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
4-Nitroaniline	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.0 U	NS	NS	NS	NS
4,6-Dinitro-2-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.0 U	NS	NS	NS	NS
N-Nitrosodiphenylamine	3.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.3	NS	NS	NS	NS
Azobenzene	1.63	1.63	2.0 U	1.5 U	1.5 U	1.5 U	2.0 U	1.5 U	1.7 U	1.5 U	NS	NS	NS	NS
4-Bromophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Carbazole	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Di-N-Butylphthalate	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
Butylbenzylphthalate	8.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS
3,3'-Dichlorobenzidine	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	2.1 U	1.9 U	NS	NS	NS	NS
Bis(2-Ethylhexyl)Phthalate	1.2	0.81	2.0 U	53	0.75 U	0.76 U	2.0 U	0.75 U	0.83 U	0.76 U	NS	NS	NS	NS
Di-N-Octylphthalate	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-11 EV14090080-03 EV14090107-05 9/15/2014	MW-11 EV14120162-09 12/19/2014	MW-11 EV15030154-02 3/26/2015	MW-11 EV15060175-10 6/24/2015	MW-12 EV14090080-05 EV14090107-06 9/15/2014	MW-12 EV14120151-01 EV14120162-17 12/18/2014	MW-12 EV15030143-03 3/25/2015	MW-12 EV15060181-02 6/25/2015	MW-14 EV14090107-07 9/17/2014	MW-14 EV14120151-06 EV14120162-19 12/18/2014	MW-14 EV15030127-01 3/23/2015	MW-14 EV15060161-01 6/23/2015
PAHs (µg/L) Method EPA-8270 SIM														
Naphthalene	160		0.020 U	0.013 U	0.013 U	0.014 U	0.034	0.11	0.015 U	0.014 U	0.024	NS	NS	NS
2-Methylnaphthalene	32		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	NS	NS	NS
1-Methylnaphthalene	1.5		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	NS	NS	NS
Acenaphthylene	--		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	NS	NS	NS
Acenaphthene	650		0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.017	0.015 U	0.014 U	0.020 U	NS	NS	NS
Fluorene	640		0.020 U	0.0090 U	0.0090 U	0.0092 U	0.020 U	0.0090 U	0.01 U	0.0092 U	0.020 U	NS	NS	NS
Pentachlorophenol	0.23	0.23	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.13 U	0.12 U	0.13 U	NS	NS	NS
Phenanthrene	--		0.020 U	0.013 U	0.013 U	0.014 U	0.020 U	0.013 U	0.015 U	0.014 U	0.020 U	NS	NS	NS
Anthracene	4,800		0.020 U	0.01 U	0.01 U	0.01 U	0.020 U	0.01 U	0.011 U	0.013	0.020 U	NS	NS	NS
Fluoranthene	86		0.020 U	0.0092 U	0.0092 U	0.0093 U	0.020 U	0.0092 U	0.01 U	0.0093 U	0.020 U	NS	NS	NS
Pyrene	480		0.020 U	0.01 U	0.01 U	0.011 U	0.020 U	0.015	0.012 U	0.011 U	0.020 U	NS	NS	NS
Benzo[A]Anthracene	0.00940	0.00940	0.020 U	0.017 U	0.017 U	0.017 U	0.020 U	0.017 U	0.018 U	0.017 U	0.020 U	NS	NS	NS
Chrysene	0.00940	0.00940	0.020 U	0.018 U	0.018 U	0.018 U	0.020 U	0.018 U	0.02 U	0.018 U	0.020 U	NS	NS	NS
Benzo[B]Fluoranthene	0.00730	0.00730	0.020 U	0.0068 U	0.0068 U	0.0068 U	0.020 U	0.0068 U	0.0074 U	0.0068 U	0.020 U	NS	NS	NS
Benzo[K]Fluoranthene	0.0237	0.0237	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.013 U	0.014 U	0.013 U	0.020 U	NS	NS	NS
Benzo[A]Pyrene	0.0104	0.0104	0.029 U	0.027 U	0.027 U	0.027 U	0.029 U	0.027 U	0.030 U	0.027 U	0.029 U	NS	NS	NS
Indeno[1,2,3-Cd]Pyrene	0.0164	0.0164	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.015 U	0.014 U	0.020 U	NS	NS	NS
Dibenz[A,H]Anthracene	0.0127	0.0127	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U	0.012 U	NS	NS	NS
Benzo[G,H,I]Perylene	--		0.020 U	0.019 U	0.019 U	0.019 U	0.020 U	0.019 U	0.02 U	0.019 U	0.020 U	NS	NS	NS
cPAH TEQ (o)	0.10		ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-15 EV14090107-08 9/17/2014	MW-15 EV14120151-05 EV14120162-15 12/18/2014	MW-15 EV15030127-02 3/23/2015	MW-15 EV15060161-02 6/23/2015	MW-16 EV14090107-09 9/17/2014	MW-16 EV14120151-07 EV14120162-21 12/18/2014	MW-16 EV15030127-03 3/23/2015	MW-16 EV15060175-03 6/24/2015	MW-17 EV14090107-10 9/17/2014	MW-17 EV14120151-08 EV14120162-18 12/18/2014	MW-17 EV15030127-04 3/23/2015	MW-17 EV15060175-05 6/24/2015
TOTAL PETROLEUM HYDROCARBONS (µg/L)														
HCID														
Gas Range	--		130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U
Diesel Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U
Oil Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U
NWTPH-G (c)	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx														
Diesel Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	1.1	0.45 U	0.45 U	0.93	1.0 U	0.45 U	0.45 U	0.45 U	2.6	1.4	1.6	2.0
Barium	1,000		23	28	21	18	45	19	22	47	55	72	68	68
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		20,000	24,000	20,000	17,000	87,000	41,000	50,000	95,000	34,000	43,000	45,000	44,000
Chromium (d)	57		2.0 U	2.0 U	2.1	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	NS	NS	NS	NS	10 U	NS	NS	NS
Iron	300		6300	5500	2700	5100	50 U	50 U	50 U	50 U	16,000	21,000	20,000	22,000
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U
Magnesium	--		7900	9600	7800	6900	12,000	11,000	15,000	18,000	11,000	15,000	16,000	16,000
Manganese	50		890	850	560	630	110	210	630	140	2000	2100	2200	2200
Potassium	--		NS	NS	3000	2800	NS	NS	10,000	18,000	NS	NS	9500	9400
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		8900	10,000	8900	8400	36,000	20,000	20,000	42,000	22,000	25,000	25,000	24,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
TOTAL METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	1.3	0.45 U	0.85	0.91	1.0 U	0.97	0.45 U	0.94 U	2.4	1.8	2.6	2.1 U
Barium	1,000		25	28	21	18	47	21	22	47	57	74	69	65
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		21,000	23,000	20,000	17,000	89,000	42,000	50,000	90,000	34,000	46,000	47,000	41,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	NS	NS	NS	NS	10 U	NS	NS	NS
Iron	300		7900	6400	3600	5500	320	190	170	470	17,000	22,000	21,000	21,000
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.36 U	1.0 U	0.28 U	0.28 U	0.28 U
Magnesium	--		8500	9000	7900	6700	13,000	11,000	16,000	16,000	12,000	16,000	17,000	14,000
Manganese	50		910	830	590	630	120	190	630	140	2000	2300	2200	2000
Potassium	--		NS	NS	3100	2700	NS	NS	10,000	16,000	NS	NS	9800	8600
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		9500	9900	9100	8200	38,000	20,000	20,000	38,000	23,000	27,000	26,000	21,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
CONVENTIONALS (mg/L)														
Total Dissolved Solids (SM2540C)	--		180	160	130	140	NS	230	580	510	280	250	280	270
Chloride (EPA-300.0)	230		12	13	10	7.2	22	20	20	21	10	20	18	18
Fluoride (EPA-300.0)	0.64		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.21	0.16 U	0.17	0.16 U
Nitrate as N (EPA-300.0)	10		0.034 U	0.034 U	0.063	0.034 U	2.8 J	0.13	2.7	2.9	0.054	0.072	0.23	0.036 U
Nitrite as N (EPA-300.0)	1.0		0.043 U	0.043 U	0.043 U	0.043 U	0.043 UJ	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U
Sulfate (EPA-300.0)	--		1.2	0.90	1.9	3.2	170	15	6.2	160	3.5	0.26 U	0.35	0.70 U
Ammonia (EPA-350.1)	--		3.0	0.63	0.093	0.22	NS	0.050 U	0.20	0.050 U	3.1	3.0	2.6	2.8
Alkalinity as CaCO3, Total (SM2320B)	--		110	110	90	88	NS	190	210	250	210	230	240	240
Bicarbonate as CaCO3 (SM2320B)	--		110	110	90	88	NS	190	210	250	210	230	240	240
Total Organic Carbon (TOC) (SM5310C)	--		2.7	1.9	1.6	2.8	NS	2.0	2.4	3.5	4.3	4.2	4.0	4.1

**TABLE 9
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CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-15 EV14090107-08 9/17/2014	MW-15 EV14120151-05 EV14120162-15 12/18/2014	MW-15 EV15030127-02 3/23/2015	MW-15 EV15060161-02 6/23/2015	MW-16 EV14090107-09 9/17/2014	MW-16 EV14120151-07 EV14120162-21 12/18/2014	MW-16 EV15030127-03 3/23/2015	MW-16 EV15060175-03 6/24/2015	MW-17 EV14090107-10 9/17/2014	MW-17 EV14120151-08 EV14120162-18 12/18/2014	MW-17 EV15030127-04 3/23/2015	MW-17 EV15060175-05 6/24/2015
FIELD PARAMETERS														
Temperature (°C)	--		17.34	15.51	16.57	17.22	21.10	15.39	14.34	19.94	19.97	16.14	14.67	20.16
Specific Conductivity (uS/cm)	--		209	217	239	184	745	347	499	791	1005	656	969	509
Dissolved Oxygen (mg/L)	--		0.31	0.81	0.59	0.91	0.43	0.61	0.39	1.44	0.66	0.37	0.12	0.89
pH (S.U.)	6.5 to 8.5		5.44	6.32	5.79	6.3	5.58	6.51	6.06	6.21	6.66	7 (f)	6.45	6.53
Oxidation Reduction Potential (mV)	--		39.6	-4.8	24.9	-24.8	97.4	27.3	38.9	186.0	-125.6	-91.7	-70.1	-82.6
Turbidity (NTU)	--		23.7	79	10.87	42.6	11.6	13.24	8.26	20.4	32.79	4.66	5.79	6.27
PESTICIDES (µg/L)														
Method EPA-8081														
hexachlorocyclohexane, alpha (A-BHC)	0.01	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
G-BHC (Lindane)	0.019	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
hexachlorocyclohexane; beta (B-BHC)	0.01	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
Heptachlor	0.01	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
hexachlorocyclohexane, delta (D-BHC)	0.012	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
Aldrin	0.01	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
Heptachlor Epoxide	0.01	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
Chlordane	0.20	0.20	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
Endosulfan I (g)	0.056		0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
4,4'-DDE	0.01	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
Dieldrin	0.01	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
Endrin	0.01	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
4,4'-DDD	0.01	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
Endosulfan II (g)	0.056		0.012 U	0.011 U	0.017	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
4,4'-DDT	0.01	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
Endrin Aldehyde (h)	0.01	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
Endosulfan Sulfate (g)	0.056		0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
Methoxychlor	0.030	0.01	0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	0.010 U	0.010 U	0.0099 U	0.010 U
Hexachlorobenzene (i)	0.01	0.01	2.0 U	0.011 U	0.010 U	0.010 U	NS	NS	NS	NS	2.0 U	0.010 U	0.0099 U	0.010 U
Toxaphene	0.50	0.50	0.50 U	0.52 U	0.50 U	0.50 U	NS	NS	NS	NS	0.50 U	0.50 U	0.50 U	0.50 U
PCBs (µg/L)														
Method EPA-8082														
PCB-1016	0.005	0.005	0.0050 U	0.0051 U	0.0050 U	0.0050 U	NS	NS	0.0050 U	0.0050 U	0.0069 U	0.0050 U	0.0050 U	0.0050 U
PCB-1221	--		0.01 U	0.011 U	0.010 U	0.010 U	NS	NS	0.010 U	0.010 U	0.013 U	0.010 U	0.010 U	0.016 U
PCB-1232	--		0.0050 U	0.0051 U	0.0050 U	0.0050 U	NS	NS	0.0065 U	0.0050 U	0.0086 U	0.0050 U	0.0050 U	0.0050 U
PCB-1242	--		0.0050 U	0.0051 U	0.0050 U	0.0063	NS	NS	0.0050 U	0.0050 U	0.0062 U	0.0082	0.012	0.0050 U
PCB-1248	--		0.0050 U	0.0051 U	0.0050 U	0.0050 U	NS	NS	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
PCB-1254	0.005	0.005	0.0050 U	0.0051 U	0.0050 U	0.0050 U	NS	NS	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
PCB-1260	0.014	0.005	0.0050 U	0.0051 U	0.0050 U	0.0050 U	NS	NS	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Total PCBs (j)	0.10		ND	ND	ND	0.0063	NS	NS	ND	ND	ND	0.0082	0.012	ND
VOCs (µg/L)														
Method EPA-8260														
Dichlorodifluoromethane	1,600		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	11		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane	2,400		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Disulfide	800		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	7,200		25 U	25 U	25 U	25 U	NS	NS	NS	NS	25 U	25 U	25 U	25 U
1,1-Dichloroethene	0.057	0.014	2.0 U	0.014 U	0.014 U	0.014 U	NS	NS	NS	NS	2.0 U	0.014 U	0.014 U	0.014 U
Methylene Chloride	4.6	0.68	5.0 U	0.68 U	0.68 U	0.68 U	NS	NS	NS	NS	5.0 U	0.68 U	0.68 U	0.68 U
Acrylonitrile	0.0572	0.0572	10 U	0.057 U	0.057 U	0.057 U	NS	NS	NS	NS	10 U	0.057 U	0.057 U	0.057 U
Methyl T-Butyl Ether (MTBE)	20		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Trans-1,2-Dichloroethene	100		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	7.7		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
2-Butanone (MEK)	4,800		10 U	10 U	10 U	10 U	NS	NS	NS	NS	10 U	10 U	10 U	10 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-15 EV14090107-08 9/17/2014	MW-15 EV14120151-05 EV14120162-15 12/18/2014	MW-15 EV15030127-02 3/23/2015	MW-15 EV15060161-02 6/23/2015	MW-16 EV14090107-09 9/17/2014	MW-16 EV14120151-07 EV14120162-21 12/18/2014	MW-16 EV15030127-03 3/23/2015	MW-16 EV15060175-03 6/24/2015	MW-17 EV14090107-10 9/17/2014	MW-17 EV14120151-08 EV14120162-18 12/18/2014	MW-17 EV15030127-04 3/23/2015	MW-17 EV15060175-05 6/24/2015
Cis-1,2-Dichloroethene	16		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Hexane (k)	480		NA	2.0 U	NA	2.0 U	NS	NS	NS	NS	NA	2.0 U	NA	2.0 U
2,2-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Bromochloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	200		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	0.38	0.014	2.0 U	0.014 U	0.014 U	0.014 U	NS	NS	NS	NS	2.0 U	0.014 U	0.014 U	0.014 U
Benzene	1.2	0.028	2.0 U	0.028 U	0.028 U	0.028 U	NS	NS	NS	NS	2.0 U	0.028 U	0.028 U	0.028 U
Dibromomethane	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	0.080	0.059	0.059 U	0.059 U	0.059 U	0.059 U	NS	NS	NS	NS	0.059 U	0.059 U	0.059 U	0.059 U
4-Methyl-2-Pentanone (MIBK)	640		10 U	10 U	10 U	10 U	NS	NS	NS	NS	10 U	10 U	10 U	10 U
Toluene	640		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Cis-1,3-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	--		10 U	10 U	10 U	10 U	NS	NS	NS	NS	10 U	10 U	10 U	10 U
1,3-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene (PCE)	0.69	0.023	2.0 U	0.023 U	0.023 U	0.023 U	NS	NS	NS	NS	2.0 U	0.023 U	0.023 U	0.023 U
1,2-Dibromoethane (EDB)	0.01		0.01 U	0.010 U	0.010 U	0.010 U	NS	NS	NS	NS	0.01 U	0.010 U	0.010 U	0.010 U
Chlorobenzene	100		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	70		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
m,p-Xylene (l)	1,600		4.0 U	4.0 U	4.0 U	4.0 U	NS	NS	NS	NS	4.0 U	4.0 U	4.0 U	4.0 U
Styrene	100		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	1,600		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	4.3		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene (cumene)	800		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichloropropane	0.023	0.023	0.023 U	0.023 U	0.023 U	0.023 U	NS	NS	NS	NS	0.023 U	0.023 U	0.023 U	0.023 U
Bromobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
N-Propyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
2-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	80		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
T-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
S-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
P-Isopropyltoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
1,3 Dichlorobenzene	320		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	8.1		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
N-Butylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	420		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo 3-Chloropropane	0.0997	0.0997	10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS	10 U	0.10 U	0.10 U	0.10 U
Hexachlorobutadiene	0.44		2.0 U	0.069 U	0.069 U	0.069 U	NS	NS	NS	NS	2.0 U	0.069 U	0.069 U	0.069 U
1,2,3-Trichlorobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
VOCs (µg/L)														
Method EPA-8260SIM (m)														
Vinyl Chloride	0.031	0.031	0.20 U	0.031 U	0.031 U	0.031 U	NS	NS	NS	NS	0.20 U	0.031 U	0.031 U	0.031 U
Carbon Tetrachloride	0.23		0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS	0.10 U	0.10 U	0.10 U	0.10 U
Chloroform	1.4		0.10 U	0.14 U	0.14 U	0.14 U	NS	NS	NS	NS	0.10 U	0.14 U	0.14 U	0.14 U
Trichloroethene (TCE)	2.5		0.020 U	0.054 U	0.054 U	0.054 U	NS	NS	NS	NS	0.020 U	0.054 U	0.054 U	0.054 U
1,2-Dichloropropane	0.50		0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS	0.10 U	0.10 U	0.10 U	0.10 U
Trans-1,3-Dichloropropene	0.34		2.0 U	0.058 U	0.058 U	0.058 U	NS	NS	NS	NS	2.0 U	0.058 U	0.058 U	0.058 U
1,1,2-Trichloroethane	0.59		0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS	0.10 U	0.10 U	0.10 U	0.10 U
Dibromochloromethane	0.40		0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS	0.10 U	0.10 U	0.10 U	0.10 U
1,1,1,2-Tetrachloroethane	1.7		0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS	0.10 U	0.10 U	0.10 U	0.10 U
1,1,2,2-Tetrachloroethane	0.17		0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS	0.10 U	0.10 U	0.10 U	0.10 U
1,2,4-Trichlorobenzene	1.5		0.10 U	0.10 U	0.10 U	0.10 U	NS	NS	NS	NS	0.10 U	0.10 U	0.10 U	0.10 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-15 EV14090107-08 9/17/2014	MW-15 EV14120151-05 EV14120162-15 12/18/2014	MW-15 EV15030127-02 3/23/2015	MW-15 EV15060161-02 6/23/2015	MW-16 EV14090107-09 9/17/2014	MW-16 EV14120151-07 EV14120162-21 12/18/2014	MW-16 EV15030127-03 3/23/2015	MW-16 EV15060175-03 6/24/2015	MW-17 EV14090107-10 9/17/2014	MW-17 EV14120151-08 EV14120162-18 12/18/2014	MW-17 EV15030127-04 3/23/2015	MW-17 EV15060175-05 6/24/2015
SVOCs (µg/L)														
Method EPA-8270														
Pyridine	8.0		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodimethylamine	1.51	1.51	1.5 U	1.4 U	1.4 U	1.4 U	NS	NS	NS	NS	1.5 U	1.4 U	1.4 U	1.4 U
Phenol	2,400		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Aniline	7.7		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Bis(2-Chloroethyl)Ether	0.94	0.94	0.94 U	0.87 U	0.89 U	0.89 U	NS	NS	NS	NS	0.94 U	0.87 U	0.87 U	0.88 U
2-Chlorophenol	40		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Benzyl Alcohol	800		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
2-Methylphenol	400		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Bis(2-Chloroisopropyl)Ether	1,400		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
3&4-Methylphenol (n)	400		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitroso-Di-N-Propylamine	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	NS	NS	NS	NS	2.0 U	1.9 U	1.9 U	1.9 U
Hexachloroethane	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	NS	NS	NS	NS	2.0 U	1.9 U	1.9 U	1.9 U
Nitrobenzene	16		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Isophorone	8.4		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
2-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dimethylphenol	160		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Benzoic Acid	64,000		10 U	10 U	10 U	10 U	NS	NS	NS	NS	10 U	10 U	10 U	10 U
Bis(2-Chloroethoxy)Methane	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dichlorophenol	24		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloroaniline (p-Chloroaniline)	1.89	1.89	2.0 U	1.8 U	1.8 U	1.8 U	NS	NS	NS	NS	2.0 U	1.8 U	1.8 U	1.8 U
2,6-Dichlorophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloro-3-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorocyclopentadiene	40		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
2,4,6-Trichlorophenol	1.4	0.90	2.0 U	0.83 U	0.85 U	0.85 U	NS	NS	NS	NS	2.0 U	0.83 U	0.83 U	0.84 U
2,4,5-Trichlorophenol	800		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
2-Chloronaphthalene	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
2-Nitroaniline	160		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Dimethylphthalate	270,000		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
2,6-Dinitrotoluene	1.82	1.82	1.8 U	1.7 U	1.7 U	1.7 U	NS	NS	NS	NS	1.8 U	1.7 U	1.7 U	1.7 U
3-Nitroaniline	--		5.0 U	5.0 U	5.0 U	5.0 U	NS	NS	NS	NS	5.0 U	5.0 U	5.0 U	5.0 U
2,4-Dinitrophenol	32		10 U	10 U	10 U	10 U	NS	NS	NS	NS	10 U	10 U	10 U	10 U
4-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Dibenzofuran	16		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dinitrotoluene	0.78	0.78	0.78 U	0.72 U	0.73 U	0.73 U	NS	NS	NS	NS	0.78 U	0.72 U	0.72 U	0.73 U
2,3,4,6-Tetrachlorophenol	480		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Diethylphthalate	13,000		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
4-Nitroaniline	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
4,6-Dinitro-2-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodiphenylamine	3.3		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.1
Azobenzene	1.63	1.63	2.0 U	1.5 U	1.5 U	1.5 U	NS	NS	NS	NS	2.0 U	1.5 U	1.5 U	1.5 U
4-Bromophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Carbazole	--		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Di-N-Butylphthalate	1,600		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
Butylbenzylphthalate	8.3		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U
3,3'-Dichlorobenzidine	2.0	2.0	13	1.9 U	1.9 U	1.9 U	NS	NS	NS	NS	2.0 U	1.9 U	1.9 U	1.9 U
Bis(2-Ethylhexyl)Phthalate	1.2	0.81	2.0 U	0.75 U	0.76 U	0.76 U	NS	NS	NS	NS	2.0 U	0.75 U	0.75 U	0.75 U
Di-N-Octylphthalate	160		2.0 U	2.0 U	2.0 U	2.0 U	NS	NS	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Table 9 - Groundwater Analytical Results

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-15 EV14090107-08 9/17/2014	MW-15 EV14120151-05 EV14120162-15 12/18/2014	MW-15 EV15030127-02 3/23/2015	MW-15 EV15060161-02 6/23/2015	MW-16 EV14090107-09 9/17/2014	MW-16 EV14120151-07 EV14120162-21 12/18/2014	MW-16 EV15030127-03 3/23/2015	MW-16 EV15060175-03 6/24/2015	MW-17 EV14090107-10 9/17/2014	MW-17 EV14120151-08 EV14120162-18 12/18/2014	MW-17 EV15030127-04 3/23/2015	MW-17 EV15060175-05 6/24/2015
PAHs (µg/L) Method EPA-8270 SIM														
Naphthalene	160		0.020 U	0.037	0.014 U	0.016	0.051	NS	NS	NS	0.025	0.013 U	0.013 U	0.013 U
2-Methylnaphthalene	32		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	NS	NS	NS	0.020 U	0.020 U	0.02 U	0.020 U
1-Methylnaphthalene	1.5		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	NS	NS	NS	0.020 U	0.020 U	0.02 U	0.020 U
Acenaphthylene	--		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	NS	NS	NS	0.020 U	0.020 U	0.02 U	0.020 U
Acenaphthene	650		0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	NS	NS	NS	0.020 U	0.014 U	0.014 U	0.014 U
Fluorene	640		0.020 U	0.0090 U	0.0092 U	0.0092 U	0.020 U	NS	NS	NS	0.020 U	0.010	0.014	0.0091 U
Pentachlorophenol	0.23	0.23	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	NS	NS	NS	0.13 U	0.12 U	0.12 U	0.12 U
Phenanthrene	--		0.020 U	0.013 U	0.014 U	0.014 U	0.020 U	NS	NS	NS	0.020 U	0.013 U	0.013 U	0.013 U
Anthracene	4,800		0.020 U	0.01 U	0.01 U	0.01 U	0.020 U	NS	NS	NS	0.020 U	0.01 U	0.01 U	0.01 U
Fluoranthene	86		0.020 U	0.0092 U	0.0093 U	0.0093 U	0.020 U	NS	NS	NS	0.020 U	0.0092 U	0.0092 U	0.0092 U
Pyrene	480		0.020 U	0.028	0.011 U	0.011 U	0.020 U	NS	NS	NS	0.020 U	0.016	0.01 U	0.011 U
Benzo[A]Anthracene	0.00940	0.00940	0.020 U	0.017 U	0.017 U	0.017 U	0.020 U	NS	NS	NS	0.020 U	0.017 U	0.017 U	0.017 U
Chrysene	0.00940	0.00940	0.020 U	0.018 U	0.018 U	0.018 U	0.020 U	NS	NS	NS	0.020 U	0.018 U	0.018 U	0.018 U
Benzo[B]Fluoranthene	0.00730	0.00730	0.020 U	0.0068 U	0.0068 U	0.0068 U	0.020 U	NS	NS	NS	0.020 U	0.0068 U	0.0068 U	0.0068 U
Benzo[K]Fluoranthene	0.0237	0.0237	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	NS	NS	NS	0.020 U	0.013 U	0.013 U	0.013 U
Benzo[A]Pyrene	0.0104	0.0104	0.029 U	0.027 U	0.027 U	0.027 U	0.029 U	NS	NS	NS	0.029 U	0.027 U	0.027 U	0.027 U
Indeno[1,2,3-Cd]Pyrene	0.0164	0.0164	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	NS	NS	NS	0.020 U	0.014 U	0.014 U	0.014 U
Dibenz[A,H]Anthracene	0.0127	0.0127	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	NS	NS	NS	0.012 U	0.011 U	0.011 U	0.011 U
Benzo[G,H,I]Perylene	--		0.020 U	0.019 U	0.019 U	0.019 U	0.020 U	NS	NS	NS	0.020 U	0.019 U	0.019 U	0.019 U
cPAH TEQ (o)	0.10		ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	ND	ND

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-18 EV14090080-02 EV14090107-11 9/15/2014	MW-18 EV14120162-02 12/19/2014	MW-18 EV15030154-03 3/26/2015	MW-18 EV15060181-07 6/25/2015	MW-100 EV14090091-09 EV14090107-12 9/16/2014	MW-100 EV14120143-03 EV14120162-22 12/17/2014	MW-100 EV15030127-05 3/23/2015	MW-100 EV15060175-04 6/24/2015	MW-101 EV14090107-13 9/17/2014	MW-101 EV14120151-02 EV14120162-13 12/18/2014	MW-101 EV15030143-04 3/25/2015	MW-101 EV15060181-05 6/25/2015
TOTAL PETROLEUM HYDROCARBONS (µg/L)														
HCID														
Gas Range	--		130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	NA	NA
Diesel Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	>310	310 U	NA	NA
Oil Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	>310	>310 U	NA	NA
NWTPH-G (c)	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx														
Diesel Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	520	140	130 U	130 U
Diesel Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	1800	450	350	450 J
Oil Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	360	250 U	250 U	250 U
Oil Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	1500	410	250 U	280
DISSOLVED METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	8.0	7.3	6.8	7.7	1.0 U	0.45 U	0.61	1.2	2.9	1.5	4.2	2.1
Barium	1,000		36	37	38	40	8.2	5.9	6.5	5.7	74	51	36	49
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		47,000	42,000	44,000	51,000	22,000	28,000	32,000	27,000	65,000	48,000	38,000	41,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	10 U	NS	NS	NS	10 U	NS	NS	NS
Iron	300		41,000	37,000	38,000	44,000	50 U	50 U	50 U	50 U	19,000	23,000	21,000	16,000
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U
Magnesium	--		19,000	16,000	17,000	21,000	9400	9000	9700	8300	20,000	15,000	13,000	12,000
Manganese	50		4400	3300	3400	4600	190	230	110	46	3000	2000	1600	1900
Potassium	--		NS	NS	3700	3300	NS	NS	3800	3400	NS	NS	5900	9100
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		14,000	15,000	15,000	14,000	20,000	11,000	12,000	10,000	29,000	22,000	20,000	19,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.20 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
TOTAL METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	8.0	7.5	6.8	7.7	1.0 U	0.88	0.86	0.76 U	3.1	1.6	2.7	2.5 U
Barium	1,000		39	42	39	41	11	8.2	6.8	7.3	93	50	37	56
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		50,000	46,000	45,000	53,000	22,000	29,000	33,000	25,000	71,000	47,000	39,000	44,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.6	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	10 U	NS	NS	NS	10 U	NS	NS	NS
Iron	300		44,000	40,000	39,000	46,000	400	260	110	100	23,000	22,000	21,000	17,000
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.35 U	1.5	0.28 U	0.28 U	0.28 U
Magnesium	--		20,000	17,000	17,000	22,000	9900	9000	9900	7400	22,000	15,000	14,000	13,000
Manganese	50		4700	3600	3500	4900	200	320	110	190	3200	2000	1700	1800
Potassium	--		NS	NS	3700	3300	NS	NS	3900	3200	NS	NS	6100	9700
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		15,000	15,000	15,000	15,000	21,000	11,000	12,000	9100	31,000	21,000	20,000	21,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
CONVENTIONALS (mg/L)														
Total Dissolved Solids (SM2540C)	--		310 J	250	260	310	230	150	180	180	430	260	260	270
Chloride (EPA-300.0)	230		19	18	19	16	12	10	11	9.7	20	12	11	10
Fluoride (EPA-300.0)	0.64		0.19	0.16 U	0.16 U	0.16 U	0.37	0.31	0.16 U	0.16 U	0.71	0.19	0.17	0.18
Nitrate as N (EPA-300.0)	10		0.034 U	0.047	0.034 U	0.034 U	1.1	1.3	1.2	3.2	3.5	0.034 U	0.045	0.034 U
Nitrite as N (EPA-300.0)	1.0		0.043 U	0.043 U	0.043 U	0.043 U	0.60	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U
Sulfate (EPA-300.0)	--		0.36	0.26 U	0.26 U	0.26 U	14	12	10	17	0.26 U	0.26 U	0.26 U	0.26 U
Ammonia (EPA-350.1)	--		1.2	0.65	0.53	0.50	0.21	0.056	0.050 U	0.050 U	1.8	1.7	1.0	0.75
Alkalinity as CaCO3, Total (SM2320B)	--		260	220	210	260	130	120	120	98	360	230	190	210
Bicarbonate as CaCO3 (SM2320B)	--		260	220	210	260	130	120	120	98	360	230	190	210
Total Organic Carbon (TOC) (SM5310C)	--		8.2	5.7	6.0	8.6	1.6	1.0	0.88	1.3	33	8.6	6.4	10

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-18 EV14090080-02 EV14090107-11 9/15/2014	MW-18 EV14120162-02 12/19/2014	MW-18 EV15030154-03 3/26/2015	MW-18 EV15060181-07 6/25/2015	MW-100 EV14090091-09 EV14090107-12 9/16/2014	MW-100 EV14120143-03 EV14120162-22 12/17/2014	MW-100 EV15030127-05 3/23/2015	MW-100 EV15060175-04 6/24/2015	MW-101 EV14090107-13 9/17/2014	MW-101 EV14120151-02 EV14120162-13 12/18/2014	MW-101 EV15030143-04 3/25/2015	MW-101 EV15060181-05 6/25/2015
FIELD PARAMETERS														
Temperature (°C)	--		17.30	15.44	16.21	17.40	18.02	15.50	14.18	15.93	17.17	13.34	15.54	17.32
Specific Conductivity (uS/cm)	--		617	680	723	1223	269	227	536	201	714	397	534	457
Dissolved Oxygen (mg/L)	--		1.43	0.19	0.06	0.45	0.38	12.35	1.24	3.61	0.36	2.81	0.09	0.30
pH (S.U.)	6.5 to 8.5		6.37	7 (f)	6.44	6.41	6.13	6.93	6.93	6.68	6.02	6.40	6.42	6.32
Oxidation Reduction Potential (mV)	--		-29.2	-99.1	-83.5	-108.2	-6.7	7.5	92.6	82.7	-2.7	-26.3	-63.5	-70.8
Turbidity (NTU)	--		12.20	1.77	1.91	2.57	20.0	12.33	12.2	2.61	34	13.76	4.15	5.22
PESTICIDES (µg/L)														
Method EPA-8081														
hexachlorocyclohexane, alpha (A-BHC)	0.01	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
G-BHC (Lindane)	0.019	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
hexachlorocyclohexane; beta (B-BHC)	0.01	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
Heptachlor	0.01	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
hexachlorocyclohexane, delta (D-BHC)	0.012	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
Aldrin	0.01	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
Heptachlor Epoxide	0.01	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
Chlordane	0.20	0.20	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
Endosulfan I (g)	0.056		0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
4,4'-DDE	0.01	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
Dieldrin	0.01	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
Endrin	0.01	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
4,4'-DDD	0.01	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
Endosulfan II (g)	0.056		0.022 U	0.019 U	0.016 J	0.036	0.012 U	0.014	0.017	0.010 U	0.040 U	0.011 U	0.011 U	0.010 U
4,4'-DDT	0.01	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
Endrin Aldehyde (h)	0.01	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
Endosulfan Sulfate (g)	0.056		0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
Methoxychlor	0.030	0.01	0.01 U	0.010 U	0.010 UJ	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U
Hexachlorobenzene (i)	0.01	0.01	2.0 U	0.010 U	0.010 UJ	0.010 U	2.0 U	0.010 U	0.011 U	0.010 U	2.0 U	0.011 U	0.011 U	0.010 U
Toxaphene	0.50	0.50	0.50 U	0.50 U	0.50 UJ	0.50 U	0.51 U	0.50 U	0.51 U	0.50 U	0.51 U	0.52 U	0.51 U	0.50 U
PCBs (µg/L)														
Method EPA-8082														
PCB-1016	0.005	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0052 U	0.0051 U	0.0050
PCB-1221	--		0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.011 U	0.014 U	0.010
PCB-1232	--		0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0052 U	0.0056 U	0.0050
PCB-1242	--		0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0052 U	0.0051 U	0.0050
PCB-1248	--		0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0052 U	0.0051 U	0.0050
PCB-1254	0.005	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0052 U	0.0051 U	0.0050
PCB-1260	0.014	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0052 U	0.0051 U	0.0050
Total PCBs (j)	0.10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VOCs (µg/L)														
Method EPA-8260														
Dichlorodifluoromethane	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	11		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Disulfide	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	7,200		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
1,1-Dichloroethene	0.057	0.014	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U
Methylene Chloride	4.6	0.68	5.0 U	0.68 U	0.68 U	0.68 U	5.0 U	0.68 U	0.68 U	0.68 U	5.0 U	0.68 U	0.68 U	0.68 U
Acrylonitrile	0.0572	0.0572	10 U	0.057 U	0.057 U	0.057 U	10 U	0.057 U	0.057 U	0.057 U	10 U	0.057 U	0.057 U	0.057 U
Methyl T-Butyl Ether (MTBE)	20		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trans-1,2-Dichloroethene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Butanone (MEK)	4,800		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-18 EV14090080-02 EV14090107-11 9/15/2014	MW-18 EV14120162-02 12/19/2014	MW-18 EV15030154-03 3/26/2015	MW-18 EV15060181-07 6/25/2015	MW-100 EV14090091-09 EV14090107-12 9/16/2014	MW-100 EV14120143-03 EV14120162-22 12/17/2014	MW-100 EV15030127-05 3/23/2015	MW-100 EV15060175-04 6/24/2015	MW-101 EV14090107-13 9/17/2014	MW-101 EV14120151-02 EV14120162-13 12/18/2014	MW-101 EV15030143-04 3/25/2015	MW-101 EV15060181-05 6/25/2015
Cis-1,2-Dichloroethene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexane (k)	480		NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U
2,2-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromochloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	200		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	0.38	0.014	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U
Benzene	1.2	0.028	2.0 U	0.028 U	0.028 U	0.028 U	2.0 U	0.028 U	0.028 U	0.028 U	2.0 U	0.028 U	0.028 U	0.028 U
Dibromomethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	0.080	0.059	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U
4-Methyl-2-Pentanone (MIBK)	640		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	640		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Cis-1,3-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene (PCE)	0.69	0.023	2.0 U	0.023 U	0.023 U	0.023 U	2.0 U	0.023 U	0.023 U	0.023 U	2.0 U	0.023 U	0.023 U	0.023 U
1,2-Dibromoethane (EDB)	0.01		0.01 U	0.010 U	0.010 U	0.010 U	0.01 U	0.010 U	0.010 U	0.010 U	0.01 U	0.010 U	0.010 U	0.010 U
Chlorobenzene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	70		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m,p-Xylene (l)	1,600		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Styrene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	4.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene (cumene)	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichloropropane	0.023	0.023	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U
Bromobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Propyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	80		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
T-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
S-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
P-Isopropyltoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3 Dichlorobenzene	320		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	8.1		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Butylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	420		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo 3-Chloropropane	0.0997	0.0997	10 U	0.10 U	0.10 U	0.10 U	10 U	0.10 U	0.10 U	0.10 U	10 U	0.10 U	0.10 U	0.10 U
Hexachlorobutadiene	0.44		2.0 U	0.069 U	0.069 U	0.069 U	2.0 U	0.069 U	0.069 U	0.069 U	2.0 U	0.069 U	0.069 U	0.069 U
1,2,3-Trichlorobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
VOCs (µg/L)														
Method EPA-8260SIM (m)														
Vinyl Chloride	0.031	0.031	0.20 U	0.031 U	0.031 U	0.031 U	0.20 U	0.031 U	0.031 U	0.031 U	0.20 U	0.031 U	0.031 U	0.031 U
Carbon Tetrachloride	0.23		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chloroform	1.4		0.10 U	0.14 U	0.14 U	0.14 U	1.2	1.2	1.1	1.4	0.10 U	0.14 U	0.14 U	0.14 U
Trichloroethene (TCE)	2.5		0.020 U	0.054 U	0.054 U	0.054 U	0.020 U	0.054 U	0.054 U	0.054 U	0.020 U	0.054 U	0.054 U	0.054 U
1,2-Dichloropropane	0.50		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Trans-1,3-Dichloropropene	0.34		2.0 U	0.058 U	0.058 U	0.058 U	2.0 U	0.058 U	0.058 U	0.058 U	2.0 U	0.058 U	0.058 U	0.058 U
1,1,2-Trichloroethane	0.59		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibromochloromethane	0.40		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,1,1,2-Tetrachloroethane	1.7		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,1,2,2-Tetrachloroethane	0.17		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,2,4-Trichlorobenzene	1.5		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-18 EV14090080-02 EV14090107-11 9/15/2014	MW-18 EV14120162-02 12/19/2014	MW-18 EV15030154-03 3/26/2015	MW-18 EV15060181-07 6/25/2015	MW-100 EV14090091-09 EV14090107-12 9/16/2014	MW-100 EV14120143-03 EV14120162-22 12/17/2014	MW-100 EV15030127-05 3/23/2015	MW-100 EV15060175-04 6/24/2015	MW-101 EV14090107-13 9/17/2014	MW-101 EV14120151-02 EV14120162-13 12/18/2014	MW-101 EV15030143-04 3/25/2015	MW-101 EV15060181-05 6/25/2015
SVOCs (µg/L) Method EPA-8270														
Pyridine	8.0		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodimethylamine	1.51	1.51	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U
Phenol	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Aniline	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bis(2-Chloroethyl)Ether	0.94	0.94	0.94 U	0.87 U	0.87 U	0.88 U	0.94 U	0.89 U	0.87 U	0.87 U	0.94 U	0.89 U	0.87 U	0.88 U
2-Chlorophenol	40		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzyl Alcohol	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Methylphenol	400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bis(2-Chloroisopropyl)Ether	1,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
3&4-Methylphenol (n)	400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	110	2.0 U	2.0 U	2.0 U
N-Nitroso-Di-N-Propylamine	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Hexachloroethane	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Nitrobenzene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Isophorone	8.4		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dimethylphenol	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzoic Acid	64,000		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-Chloroethoxy)Methane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dichlorophenol	24		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloroaniline (p-Chloroaniline)	1.89	1.89	2.0 U	1.8 U	1.8 U	1.8 U	2.0 U	1.8 U	1.8 U	1.8 U	2.0 U	1.8 U	1.8 U	1.8 U
2,6-Dichlorophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloro-3-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorocyclopentadiene	40		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4,6-Trichlorophenol	1.4	0.90	2.0 U	0.83 U	0.83 U	0.84 U	2.0 U	0.85 U	0.83 U	0.83 U	2.0 U	0.85 U	0.83 U	0.84 U
2,4,5-Trichlorophenol	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chloronaphthalene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Nitroaniline	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dimethylphthalate	270,000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,6-Dinitrotoluene	1.82	1.82	1.8 U	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U
3-Nitroaniline	--		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2,4-Dinitrophenol	32		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibenzofuran	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dinitrotoluene	0.78	0.78	0.78 U	0.72 U	0.72 U	0.73 U	0.78 U	0.73 U	0.72 U	0.72 U	0.78 U	0.73 U	0.72 U	0.73 U
2,3,4,6-Tetrachlorophenol	480		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Diethylphthalate	13,000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Nitroaniline	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4,6-Dinitro-2-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodiphenylamine	3.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Azobenzene	1.63	1.63	2.0 U	1.5 U	1.5 U	1.5 U	2.0 U	1.5 U	1.5 U	1.5 U	2.0 U	1.5 U	1.5 U	1.5 U
4-Bromophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbazole	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Di-N-Butylphthalate	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Butylbenzylphthalate	8.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
3,3'-Dichlorobenzidine	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Bis(2-Ethylhexyl)Phthalate	1.2	0.81	2.0 U	32	0.75 U	0.76 U	2.0 U	0.76 U	0.75 U	0.75 U	2.0 U	30	0.75 U	0.75 U
Di-N-Octylphthalate	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-18 EV14090080-02 EV14090107-11 9/15/2014	MW-18 EV14120162-02 12/19/2014	MW-18 EV15030154-03 3/26/2015	MW-18 EV15060181-07 6/25/2015	MW-100 EV14090091-09 EV14090107-12 9/16/2014	MW-100 EV14120143-03 EV14120162-22 12/17/2014	MW-100 EV15030127-05 3/23/2015	MW-100 EV15060175-04 6/24/2015	MW-101 EV14090107-13 9/17/2014	MW-101 EV14120151-02 EV14120162-13 12/18/2014	MW-101 EV15030143-04 3/25/2015	MW-101 EV15060181-05 6/25/2015
PAHs (µg/L) Method EPA-8270 SIM														
Naphthalene	160		0.020 U	0.013 U	0.014	0.013 U	0.020 U	0.014 U	0.02	0.013 U	0.060	0.014	0.13	0.013 U
2-Methylnaphthalene	32		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U
1-Methylnaphthalene	1.5		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U
Acenaphthylene	--		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U
Acenaphthene	650		0.020 U	0.014 U	0.014 U	0.019	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U
Fluorene	640		0.020 U	0.012	0.0090 U	0.0091 U	0.020 U	0.0092 U	0.0090 U	0.0090 U	0.020 U	0.0092 U	0.0090 U	0.0091 U
Pentachlorophenol	0.23	0.23	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U
Phenanthrene	--		0.020 U	0.015	0.013 U	0.013 U	0.020 U	0.014 U	0.013 U	0.013 U	0.020 U	0.014 U	0.013 U	0.013 U
Anthracene	4,800		0.020 U	0.015	0.01 U	0.01 U	0.020 U	0.01 U	0.01 U	0.01 U	0.020 U	0.01 U	0.01 U	0.01 U
Fluoranthene	86		0.020 U	0.0092 U	0.0092 U	0.0092 U	0.020 U	0.0093 U	0.0092 U	0.0092 U	0.020 U	0.0093 U	0.0092 U	0.0092 U
Pyrene	480		0.020 U	0.01 U	0.01 U	0.011 U	0.020 U	0.011 U	0.01 U	0.01 U	0.020 U	0.011 U	0.01 U	0.011 U
Benzo[A]Anthracene	0.00940	0.00940	0.020 U	0.017 U	0.017 U	0.017 U	0.020 U	0.017 U	0.017 U	0.017 U	0.020 U	0.017 U	0.017 U	0.017 U
Chrysene	0.00940	0.00940	0.020 U	0.018 U	0.018 U	0.018 U	0.020 U	0.018 U	0.018 U	0.018 U	0.020 U	0.018 U	0.018 U	0.018 U
Benzo[B]Fluoranthene	0.00730	0.00730	0.020 U	0.0068 U	0.0068 U	0.0068 U	0.020 U	0.0068 U	0.0068 U	0.0068 U	0.020 U	0.0068 U	0.0068 U	0.0068 U
Benzo[K]Fluoranthene	0.0237	0.0237	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U
Benzo[A]Pyrene	0.0104	0.0104	0.029 U	0.027 U	0.027 U	0.027 U	0.029 U	0.027 U	0.027 U	0.027 U	0.029 U	0.027 U	0.027 U	0.027 U
Indeno[1,2,3-Cd]Pyrene	0.0164	0.0164	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U
Dibenz[A,H]Anthracene	0.0127	0.0127	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U
Benzo[G,H,I]Perylene	--		0.020 U	0.019 U	0.019 U	0.019 U	0.020 U	0.019 U	0.019 U	0.019 U	0.020 U	0.019 U	0.019 U	0.019 U
cPAH TEQ (o)	0.10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-102 EV14090091-02 EV14090107-14 9/16/2014	MW-102 EV14120162-05 12/19/2014	MW-102 EV15030154-06 3/26/2015	MW-102 EV15060181-04 6/25/2015	MW-103 EV14090091-03 EV14090107-15 9/16/2014	MW-103 EV14120162-06 12/19/2014	MW-103 EV15030143-09 3/24/2015	MW-103 EV15060188-04 6/25/2015	MW-104 EV14090091-04 EV14090107-16 9/16/2014	MW-104 EV14120119-02 EV14120162-26 12/16/2014	MW-104 EV15030143-10 3/24/2015	MW-104 EV15060175-11 6/24/2015
TOTAL PETROLEUM HYDROCARBONS (µg/L)														
HCID														
Gas Range	--		130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U
Diesel Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U
Oil Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U
NWTPH-G (c)	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx														
Diesel Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	1.3	0.45 U	0.45 U	0.45 U	3.8	4.9	7.3	6.1	5.7	5.4	6.4	5.8
Barium	1,000		21	27	31	30	50	55	59	52	49	48	51	51
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		22,000	26,000	28,000	27,000	35,000	43,000	45,000	40,000	36,000	37,000	38,000	38,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	10 U	NS	NS	NS	10 U	NS	NS	NS
Iron	300		4200	5400	6400	6000	22,000	29,000	28,000	26,000	26,000	27,000	28,000	27,000
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U
Magnesium	--		8300	9900	11,000	11,000	12,000	15,000	16,000	14,000	12,000	13,000	14,000	13,000
Manganese	50		710	720	860	800	2500	2900	2900	2900	2300	2100	2100	2100
Potassium	--		NS	NS	4900	4700	NS	NS	5900	5500	NS	NS	6800	6600
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		14,000	16,000	16,000	16,000	22,000	23,000	23,000	22,000	18,000	18,000	18,000	18,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.20 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
TOTAL METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	1.0 U	0.45 U	0.45 U	0.45 U	3.5	5.3	6.0	6.6	5.8	4.8	6.7	6.2
Barium	1,000		22	27	32	31	53	58	61	52	51	56	51	52
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		22,000	25,000	27,000	27,000	36,000	43,000	45,000	39,000	36,000	37,000	38,000	39,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	10 U	NS	NS	NS	10 U	NS	NS	NS
Iron	300		4700	5300	6800	6100	22,000	29,000	28,000	26,000	27,000	27,000	28,000	29,000
Lead	0.54		1.0 U	0.28 U	0.46	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U	1.0	1.7	0.28 U	0.28 U
Magnesium	--		8900	9300	11,000	11,000	13,000	15,000	16,000	14,000	13,000	13,000	14,000	14,000
Manganese	50		740	710	850	800	2500	2900	2900	2900	2400	2000	2100	2100
Potassium	--		NS	NS	4700	4700	NS	NS	5900	5400	NS	NS	6800	6700
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		15,000	14,000	16,000	16,000	23,000	23,000	23,000	22,000	18,000	18,000	18,000	18,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
CONVENTIONALS (mg/L)														
Total Dissolved Solids (SM2540C)	--		190	190	170	200	230	300	240	240	220	250	210	160
Chloride (EPA-300.0)	230		11	11	13	11	19	24	19	19	18	18	15	16
Fluoride (EPA-300.0)	0.64		0.26	0.28	0.16 U	0.16 U	0.24	0.46	0.16 U	0.16 U	0.19	0.26	0.16 U	0.16 U
Nitrate as N (EPA-300.0)	10		0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.036	0.034 U	0.034 U	0.034 U
Nitrite as N (EPA-300.0)	1.0		0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U
Sulfate (EPA-300.0)	--		13	10	9.0	12	0.30	0.29	0.26 U	0.26 U	0.26 U	0.26 U	17	0.26 U
Ammonia (EPA-350.1)	--		2.5	2.2	2.4	2.3	3.1	2.0	2.0	2.0	2.0	2.1	1.7	1.7
Alkalinity as CaCO ₃ , Total (SM2320B)	--		130	130	150	140	220	210	220	220	200	200	180	200
Bicarbonate as CaCO ₃ (SM2320B)	--		130	130	150	140	220	210	220	220	200	200	180	200
Total Organic Carbon (TOC) (SM5310C)	--		1.9	1.5	2.0	1.7	4.0	4.3	4.1	4.9	4.9	4.1	4.2	5.0

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-102 EV14090091-02 EV14090107-14 9/16/2014	MW-102 EV14120162-05 12/19/2014	MW-102 EV15030154-06 3/26/2015	MW-102 EV15060181-04 6/25/2015	MW-103 EV14090091-03 EV14090107-15 9/16/2014	MW-103 EV14120162-06 12/19/2014	MW-103 EV15030143-09 3/24/2015	MW-103 EV15060188-04 6/25/2015	MW-104 EV14090091-04 EV14090107-16 9/16/2014	MW-104 EV14120162-26 12/16/2014	MW-104 EV15030143-10 3/24/2015	MW-104 EV15060175-11 6/24/2015
FIELD PARAMETERS														
Temperature (°C)	--		15.79	14.90	16.19	16.43	16.51	14.87	14.43	18.97	16.86	14.51	15.48	16.57
Specific Conductivity (uS/cm)	--		319	363	411	492	521	634	571	809	501	368	570	378
Dissolved Oxygen (mg/L)	--		0.62	0.25	0.10	0.47	1.03	0.28	0.52	0.44	0.93	18.65	0.10	0.23
pH (S.U.)	6.5 to 8.5		5.93	7 (f)	6.60	6.27	7.26	7 (f)	5.64	6.34	7.62	6.43	6.36	6.38
Oxidation Reduction Potential (mV)	--		-178.8	-65.0	-96.0	-52.5	-333.9	-85.6	-95.9	-76.9	-377.5	-83.3	-93.1	-83.9
Turbidity (NTU)	--		97.45	3.24	1.61	0.87	17.37	3.42	1.72	6.45	18.34	6.69	1.45	0.61
PESTICIDES (µg/L)														
Method EPA-8081														
hexachlorocyclohexane, alpha (A-BHC)	0.01	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
G-BHC (Lindane)	0.019	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
hexachlorocyclohexane; beta (B-BHC)	0.01	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Heptachlor	0.01	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
hexachlorocyclohexane, delta (D-BHC)	0.012	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Aldrin	0.01	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Heptachlor Epoxide	0.01	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Chlordane	0.20	0.20	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Endosulfan I (g)	0.056		0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
4,4'-DDE	0.01	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Dieldrin	0.01	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Endrin	0.01	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
4,4'-DDD	0.01	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.15	0.12	0.065	0.084	0.011 U	0.011 U	0.010 U	0.010 U
Endosulfan II (g)	0.056		0.011 U	0.011 U	0.019	0.010 U	0.017 U	0.019 U	0.068	0.039	0.011 U	0.011 U	0.011	0.010 U
4,4'-DDT	0.01	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.090	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Endrin Aldehyde (h)	0.01	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Endosulfan Sulfate (g)	0.056		0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Methoxychlor	0.030	0.01	0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Hexachlorobenzene (i)	0.01	0.01	2.0 U	0.010 U	0.011 U	0.010 U	2.0 U	0.010 U	0.010 U	0.011 U	2.0 U	0.011 U	0.010 U	0.010 U
Toxaphene	0.50	0.50	0.51 U	0.50 U	0.51 U	0.50 U	0.51 U	0.50 U	0.50 U	0.52 U	0.52 U	0.52 U	0.50 U	0.50 U
PCBs (µg/L)														
Method EPA-8082														
PCB-1016	0.005	0.005	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0094 U	0.0052 U	0.0052 U	0.0052 U	0.0050 U	0.0050 U
PCB-1221	--		0.011 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
PCB-1232	--		0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.012 U	0.0071	0.0052 U	0.0052 U	0.0050 U	0.042
PCB-1242	--		0.0085	0.0050 U	0.0051 U	0.0050 U	0.022	0.0080	0.0089 U	0.0052 U	0.027	0.040	0.025	0.0050 U
PCB-1248	--		0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0054 U	0.0052 U	0.0052 U	0.0052 U	0.0050 U	0.0050 U
PCB-1254	0.005	0.005	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0066 U	0.0057 U	0.0050 U	0.0052 U	0.0052 U	0.0052 U	0.0050 U	0.0050 U
PCB-1260	0.014	0.005	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0050 U	0.0050 U	0.0052 U	0.0052 U	0.0052 U	0.0050 U	0.0050 U
Total PCBs (j)	0.10		0.0085	ND	ND	ND	0.022	0.0080	ND	0.0071	0.027	0.040	0.025	0.042
VOCs (µg/L)														
Method EPA-8260														
Dichlorodifluoromethane	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	11		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Disulfide	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	7,200		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
1,1-Dichloroethene	0.057	0.014	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U
Methylene Chloride	4.6	0.68	5.0 U	0.68 U	0.68 U	0.68 U	5.0 U	0.68 U	0.68 U	0.68 U	5.0 U	0.68 U	0.68 U	0.68 U
Acrylonitrile	0.0572	0.0572	10 U	0.057 U	0.057 U	0.057 U	10 U	0.057 U	0.057 U	0.057 U	10 U	0.057 U	0.057 U	0.057 U
Methyl T-Butyl Ether (MTBE)	20		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trans-1,2-Dichloroethene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Butanone (MEK)	4,800		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-102 EV14090091-02 EV14090107-14 9/16/2014	MW-102 EV14120162-05 12/19/2014	MW-102 EV15030154-06 3/26/2015	MW-102 EV15060181-04 6/25/2015	MW-103 EV14090091-03 EV14090107-15 9/16/2014	MW-103 EV14120162-06 12/19/2014	MW-103 EV15030143-09 3/24/2015	MW-103 EV15060188-04 6/25/2015	MW-104 EV14090091-04 EV14090107-16 9/16/2014	MW-104 EV14120119-02 EV14120162-26 12/16/2014	MW-104 EV15030143-10 3/24/2015	MW-104 EV15060175-11 6/24/2015
Cis-1,2-Dichloroethene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexane (k)	480		NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U
2,2-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromochloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	200		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	0.38	0.014	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U
Benzene	1.2	0.028	2.0 U	0.028 U	0.028 U	0.028 U	2.0 U	0.028 U	0.028 U	0.028 U	2.0 U	0.028 U	0.028 U	0.028 U
Dibromomethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	0.080	0.059	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U
4-Methyl-2-Pentanone (MIBK)	640		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	640		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Cis-1,3-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene (PCE)	0.69	0.023	2.0 U	0.023 U	0.023 U	0.023 U	2.0 U	0.023 U	0.023 U	0.023 U	2.0 U	0.023 U	0.023 U	0.023 U
1,2-Dibromoethane (EDB)	0.01		0.01 U	0.010 U	0.010 U	0.010 U	0.01 U	0.010 U	0.010 U	0.010 U	0.01 U	0.010 U	0.010 U	0.010 U
Chlorobenzene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	70		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m,p-Xylene (l)	1,600		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Styrene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	4.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene (cumene)	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichloropropane	0.023	0.023	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U
Bromobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Propyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	80		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
T-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
S-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
P-Isopropyltoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3 Dichlorobenzene	320		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	8.1		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Butylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	420		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo 3-Chloropropane	0.0997	0.0997	10 U	0.10 U	0.10 U	0.10 U	10 U	0.10 U	0.10 U	0.10 U	10 U	0.10 U	0.10 U	0.10 U
Hexachlorobutadiene	0.44		2.0 U	0.069 U	0.069 U	0.069 U	2.0 U	0.069 U	0.069 U	0.069 U	2.0 U	0.069 U	0.069 U	0.069 U
1,2,3-Trichlorobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
VOCs (µg/L)														
Method EPA-8260SIM (m)														
Vinyl Chloride	0.031	0.031	0.20 U	0.031 U	0.031 U	0.031 U	0.20 U	0.031 U	0.031 U	0.031 U	0.20 U	0.031 U	0.031 U	0.031 U
Carbon Tetrachloride	0.23		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chloroform	1.4		0.10 U	0.14 U	0.14 U	0.14 U	0.10 U	0.14 U	0.14 U	0.14 U	0.10 U	0.14 U	0.14 U	0.14 U
Trichloroethene (TCE)	2.5		0.020 U	0.054 U	0.054 U	0.054 U	0.020 U	0.054 U	0.054 U	0.054 U	0.020 U	0.054 U	0.054 U	0.054 U
1,2-Dichloropropane	0.50		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Trans-1,3-Dichloropropene	0.34		2.0 U	0.058 U	0.058 U	0.058 U	2.0 U	0.058 U	0.058 U	0.058 U	2.0 U	0.058 U	0.058 U	0.058 U
1,1,2-Trichloroethane	0.59		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibromochloromethane	0.40		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,1,1,2-Tetrachloroethane	1.7		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,1,2,2-Tetrachloroethane	0.17		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,2,4-Trichlorobenzene	1.5		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-102 EV14090091-02 EV14090107-14 9/16/2014	MW-102 EV14120162-05 12/19/2014	MW-102 EV15030154-06 3/26/2015	MW-102 EV15060181-04 6/25/2015	MW-103 EV14090091-03 EV14090107-15 9/16/2014	MW-103 EV14120162-06 12/19/2014	MW-103 EV15030143-09 3/24/2015	MW-103 EV15060188-04 6/25/2015	MW-104 EV14090091-04 EV14090107-16 9/16/2014	MW-104 EV14120119-02 EV14120162-26 12/16/2014	MW-104 EV15030143-10 3/24/2015	MW-104 EV15060175-11 6/24/2015
SVOCs (µg/L) Method EPA-8270														
Pyridine	8.0		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodimethylamine	1.51	1.51	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U
Phenol	2,400		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Aniline	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bis(2-Chloroethyl)Ether	0.94	0.94	0.94 U	0.87 U	0.87 U	0.89 U	0.94 U	0.87 U	0.89 U	0.89 U	0.94 U	0.87 U	0.87 U	0.88 U
2-Chlorophenol	40		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzyl Alcohol	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Methylphenol	400		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bis(2-Chloroisopropyl)Ether	1,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
3&4-Methylphenol (n)	400		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitroso-Di-N-Propylamine	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Hexachloroethane	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Nitrobenzene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Isophorone	8.4		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Nitrophenol	--		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dimethylphenol	160		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzoic Acid	64,000		10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-Chloroethoxy)Methane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dichlorophenol	24		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloroaniline (p-Chloroaniline)	1.89	1.89	2.0 U	1.8 U	1.8 U	1.8 U	2.0 U	1.8 U	1.8 U	1.8 U	2.0 U	1.8 U	1.8 U	1.8 U
2,6-Dichlorophenol	--		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloro-3-Methylphenol	--		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorocyclopentadiene	40		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4,6-Trichlorophenol	1.4	0.90	2.0 UJ	0.83 U	0.83 U	0.85 U	2.0 U	0.83 U	0.85 U	0.85 U	2.0 U	0.83 U	0.83 U	0.84 U
2,4,5-Trichlorophenol	800		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chloronaphthalene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Nitroaniline	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dimethylphthalate	270,000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,6-Dinitrotoluene	1.82	1.82	1.8 U	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U
3-Nitroaniline	--		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2,4-Dinitrophenol	32		10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	--		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibenzofuran	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dinitrotoluene	0.78	0.78	0.78 U	0.72 U	0.72 U	0.73 U	0.78 U	0.72 U	0.73 U	0.74 U	0.78 U	0.72 U	0.72 U	0.73 U
2,3,4,6-Tetrachlorophenol	480		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Diethylphthalate	13,000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Nitroaniline	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4,6-Dinitro-2-Methylphenol	--		2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodiphenylamine	3.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Azobenzene	1.63	1.63	2.0 U	1.5 U	1.5 U	1.5 U	2.0 U	1.5 U	1.5 U	1.6 U	2.0 U	1.5 U	1.5 U	1.5 U
4-Bromophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbazole	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Di-N-Butylphthalate	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Butylbenzylphthalate	8.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
3,3'-Dichlorobenzidine	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Bis(2-Ethylhexyl)Phthalate	1.2	0.81	2.0 U	26	0.75 U	0.76 U	2.0 U	38	0.76 U	0.77 U	2.0 U	0.75 U	0.75 U	0.75 U
Di-N-Octylphthalate	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-102 EV14090091-02 EV14090107-14 9/16/2014	MW-102 EV14120162-05 12/19/2014	MW-102 EV15030154-06 3/26/2015	MW-102 EV15060181-04 6/25/2015	MW-103 EV14090091-03 EV14090107-15 9/16/2014	MW-103 EV14120162-06 12/19/2014	MW-103 EV15030143-09 3/24/2015	MW-103 EV15060188-04 6/25/2015	MW-104 EV14090091-04 EV14090107-16 9/16/2014	MW-104 EV14120119-02 EV14120162-26 12/16/2014	MW-104 EV15030143-10 3/24/2015	MW-104 EV15060175-11 6/24/2015
PAHs (µg/L) Method EPA-8270 SIM														
Naphthalene	160		0.020 U	0.015	0.015	0.014 U	0.042	0.020	0.014 U	0.014 U	0.039	0.013 U	0.017	0.013 U
2-Methylnaphthalene	32		0.029	0.028	0.061	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U
1-Methylnaphthalene	1.5		0.020 U	0.020 U	0.038	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U
Acenaphthylene	--		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U
Acenaphthene	650		0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U
Fluorene	640		0.020 U	0.0090 U	0.0090 U	0.0092 U	0.020 U	0.0090 U	0.0092 U	0.0093 U	0.020 U	0.0090 U	0.0090 U	0.0091 U
Pentachlorophenol	0.23	0.23	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.12 U	0.13 U	0.13 U	0.12 U	0.12 U	0.12 U
Phenanthrene	--		0.020 U	0.013 U	0.013 U	0.014 U	0.020 U	0.013 U	0.014 U	0.014 U	0.020 U	0.013 U	0.013 U	0.013 U
Anthracene	4,800		0.020 U	0.01 U	0.01 U	0.01 U	0.020 U	0.01 U	0.01 U	0.01 U	0.020 U	0.010	0.012	0.01 U
Fluoranthene	86		0.020 U	0.0092 U	0.0092 U	0.0093 U	0.020 U	0.0092 U	0.0093 U	0.0094 U	0.020 U	0.0092 U	0.0092 U	0.0092 U
Pyrene	480		0.020 U	0.01 U	0.01 U	0.011 U	0.020 U	0.01 U	0.011 U	0.011 U	0.020 U	0.01 U	0.01 U	0.011 U
Benzo[A]Anthracene	0.00940	0.00940	0.020 U	0.017 U	0.017 U	0.017 U	0.020 U	0.017 U	0.017 U	0.017 U	0.020 U	0.017 U	0.017 U	0.017 U
Chrysene	0.00940	0.00940	0.020 U	0.018 U	0.018 U	0.018 U	0.020 U	0.018 U	0.018 U	0.018 U	0.020 U	0.018 U	0.018 U	0.018 U
Benzo[B]Fluoranthene	0.00730	0.00730	0.020 U	0.0068 U	0.0068 U	0.0068 U	0.020 U	0.0068 U	0.0068 U	0.0069 U	0.020 U	0.0068 U	0.0068 U	0.0068 U
Benzo[K]Fluoranthene	0.0237	0.0237	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U
Benzo[A]Pyrene	0.0104	0.0104	0.029 U	0.027 U	0.027 U	0.027 U	0.029 U	0.027 U	0.027 U	0.027 U	0.029 U	0.027 U	0.027 U	0.027 U
Indeno[1,2,3-Cd]Pyrene	0.0164	0.0164	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U
Dibenz[A,H]Anthracene	0.0127	0.0127	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U
Benzo[G,H,I]Perylene	--		0.020 U	0.019 U	0.019 U	0.019 U	0.020 U	0.019 U	0.019 U	0.019 U	0.020 U	0.019 U	0.019 U	0.019 U
cPAH TEQ (o)	0.10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-105 EV14090080-04 EV14090107-17 9/15/2014	MW-105 EV14120119-01 EV14120162-27 12/16/2014	MW-105 EV15030143-08 6/25/2015	MW-105 EV15060181-06 6/25/2015	MW-106 EV14090091-07 EV14090107-18 9/16/2014	MW-106-Dup EV14090091-11 EV14090107-26 9/16/2014	MW-106 EV14120162-10 12/19/2014	MW-106-Dup EV14120162-12 12/19/2014	MW-106 EV15030127-09 3/24/2015	MW-106-Dup EV15030127-10 3/24/2015	MW-106 EV15060181-01 6/25/2015	MW-106-Dup EV15060181-03 6/25/2015
TOTAL PETROLEUM HYDROCARBONS (µg/L)														
HCID														
Gas Range	--		130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	NA	NA	NA	NA
Diesel Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	NA	NA	NA	NA
Oil Range	--		310 U	310 U	310 U	310 U	310 U	310 U	>310	>310	NA	NA	NA	NA
NWTPH-G (c)	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx														
Diesel Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	170	190	130 U	130 U	130 U	130 U
Diesel Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	670	640	180	200	160	180
Oil Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	250 U	250 U	250 U	250 U	250 U	250 U
Oil Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	300	310	250 U	250 U	250 U	250 U
DISSOLVED METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	3.7	4.2	4.6	2.8	5.7	5.3	8.4	7.9	8.7	8.5	6.7 J	8.3 J
Barium	1,000		54	62	66	32	45	45	140	140	97	97	62	61
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		29,000	37,000	40,000	21,000	28,000	29,000	76,000	77,000	46,000	46,000	32,000	33,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	10 U	10 UJ	NS	NS	NS	NS	NS	NS
Iron	300		20,000	30,000	32,000	17,000	7000	6900	56,000	56,000	40,000	40,000	28,000	28,000
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	1.0 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Magnesium	--		9100	12,000	13,000	6500	11,000	11,000	23,000	23,000	14,000	14,000	9700	9700
Manganese	50		2700	2900	3000	1700	2000	1900	5700	5600	2900	2900	2100	2100
Potassium	--		NS	NS	7700	5400	NS	NS	NS	NS	12,000	12,000	9800	9900
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	1.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		28,000	16,000	17,000	11,000	57,000	62,000	30,000	30,000	22,000	22,000	19,000	19,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.20 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
TOTAL METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	3.7	3.9	4.8	3.2	5.2	5.1	7.9	8	7.2	8.8	7.0	6.6
Barium	1,000		60	64	67	34	46	45	140	140	98	100	64	63
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		29,000	38,000	41,000	22,000	27,000	28,000	75,000	76,000	47,000	47,000	32,000	32,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	10 U	10 UJ	NS	NS	NS	NS	NS	NS
Iron	300		20,000	31,000	32,000	17,000	7300	6800	57,000	55,000	41,000	41,000	28,000	29,000
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	1.0 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Magnesium	--		9600	12,000	13,000	6800	10,000	11,000	23,000	23,000	14,000	14,000	9600	9500
Manganese	50		2700	2900	3000	1700	1800	1800	5500	5400	2800	2900	1900	1900
Potassium	--		NS	NS	7800	5500	NS	NS	NS	NS	13,000	13,000	9900	9900
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	1.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		35,000	17,000	17,000	11,000	64,000	65,000	30,000	31,000	23,000	23,000	20,000	20,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.20 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
CONVENTIONALS (mg/L)														
Total Dissolved Solids (SM2540C)	--		900	220	230	240	320	320	460	490	290	270	200 J	250 J
Chloride (EPA-300.0)	230		18	17	19	5.9	18	18	17	19	18	18	12	12
Fluoride (EPA-300.0)	0.64		0.22	0.16 U	0.16 U	0.16 U	0.51	0.37	0.26	0.24	0.17	0.25	0.16 U	0.16 U
Nitrate as N (EPA-300.0)	10		0.081	0.034 U	0.034 U	0.034 U	0.043 J	0.12 J	0.034 U	0.034 U	0.034 U	0.034 U	0.088 J	0.034 UJ
Nitrite as N (EPA-300.0)	1.0		0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U
Sulfate (EPA-300.0)	--		2.5	0.26 U	0.26 U	1.6	20	20	0.29	0.31	0.26 U	0.33	2.9	3.0
Ammonia (EPA-350.1)	--		0.13	1.7	1.0	0.89	5.3	5.6	9.0	9.0	10	10	8.4	8.4
Alkalinity as CaCO3, Total (SM2320B)	--		220	190	180	110	280	280	400	400	250	260	190	200
Bicarbonate as CaCO3 (SM2320B)	--		220	190	180	110	280	280	400	400	250	260	190	200
Total Organic Carbon (TOC) (SM5310C)	--		6.2	5.3	5.2	5.9	5.8	5.8	11	11	6.8	6.7	4.1	4.2

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-105 EV14090080-04 EV14090107-17 9/15/2014	MW-105 EV14120119-01 EV14120162-27 12/16/2014	MW-105 EV15030143-08 3/24/2015	MW-105 EV15060181-06 6/25/2015	MW-106 EV14090091-07 EV14090107-18 9/16/2014	MW-106-Dup EV14090091-11 EV14090107-26 9/16/2014	MW-106 EV14120162-10 12/19/2014	MW-106-Dup EV14120162-12 12/19/2014	MW-106 EV15030127-09 3/24/2015	MW-106-Dup EV15030127-10 3/24/2015	MW-106 EV15060181-01 6/25/2015	MW-106-Dup EV15060181-03 6/25/2015
FIELD PARAMETERS														
Temperature (°C)	--		17.87	14.57	15.94	16.33	19.57	19.72	19.42	19.42	19.49	19.49	19.90	19.90
Specific Conductivity (uS/cm)	--		422	363	598	245	640	637	1219	1216	859	859	481	482
Dissolved Oxygen (mg/L)	--		0.56	1.16	0.10	0.16	0.55	0.50	0.24	0.25	0.16	0.16	0.49	0.54
pH (S.U.)	6.5 to 8.5		5.34	6.38	6.42	6.43	5.90	5.96	7 (f)	7 (f)	6.29	6.29	6.49	6.44
Oxidation Reduction Potential (mV)	--		-15.7	-85.6	-92.1	-94.6	6.3	-3.0	-102.2	-102.5	68.4	68.4	-119.8	-119.5
Turbidity (NTU)	--		15.4	6.82	0.73	0.87	14.7	13.5	2.23	3.01	1.08	1.08	4.21	3.78
PESTICIDES (µg/L)														
Method EPA-8081														
hexachlorocyclohexane, alpha (A-BHC)	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
G-BHC (Lindane)	0.019	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
hexachlorocyclohexane; beta (B-BHC)	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Heptachlor	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
hexachlorocyclohexane, delta (D-BHC)	0.012	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Aldrin	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Heptachlor Epoxide	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Chlordane	0.20	0.20	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Endosulfan I (g)	0.056		0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
4,4'-DDE	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Dieldrin	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Endrin	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
4,4'-DDD	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Endosulfan II (g)	0.056		0.014 U	0.011 U	0.010 U	0.012	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
4,4'-DDT	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Endrin Aldehyde (h)	0.01	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Endosulfan Sulfate (g)	0.056		0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Methoxychlor	0.030	0.01	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Hexachlorobenzene (i)	0.01	0.01	2.0 U	0.011 U	0.010 U	0.010 U	2.0 U	2.0 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U
Toxaphene	0.50	0.50	0.52 U	0.52 U	0.50 U	0.50 U	0.51 U	0.52 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
PCBs (µg/L)														
Method EPA-8082														
PCB-1016	0.005	0.005	0.0052 U	0.0052 U	0.0050 U	0.0050 U	0.0051 U	0.0052 U	0.0050 U	0.0050 U	0.013 U	0.015 U	0.0050 U	0.0050 U
PCB-1221	--		0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.068 U	0.010 U	0.010 U
PCB-1232	--		0.0052 U	0.0052 U	0.0050 U	0.013	0.0051 U	0.0052 U	0.0050 U	0.0050 U	0.036 U	0.072 U	0.022 J	0.0095 J
PCB-1242	--		0.031	0.015	0.014	0.0050 U	0.035	0.036	0.023 J	0.017 J	0.022 U	0.023 U	0.0050 U	0.0050 U
PCB-1248	--		0.0052 U	0.0052 U	0.0050 U	0.0050 U	0.0051 U	0.0052 U	0.0050 U	0.0050 U	0.015 U	0.019 U	0.0050 U	0.0050 U
PCB-1254	0.005	0.005	0.0052 U	0.0052 U	0.0050 U	0.0050 U	0.0051 U	0.0052 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
PCB-1260	0.014	0.005	0.0052 U	0.0052 U	0.0050 U	0.0050 U	0.0051 U	0.0052 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Total PCBs (j)	0.10		0.031	0.015	0.032	0.013	0.035	0.036	0.023 J	0.017 J	ND	ND	0.022	0.0095 J
VOCs (µg/L)														
Method EPA-8260														
Dichlorodifluoromethane	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	11		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Disulfide	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	7,200		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
1,1-Dichloroethene	0.057	0.014	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	2.0 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
Methylene Chloride	4.6	0.68	5.0 U	0.68 U	0.68 U	0.68 U	5.0 U	5.0 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U
Acrylonitrile	0.0572	0.0572	10 U	0.057 U	0.057 U	0.057 U	10 U	10 U	0.057 U	0.057 U	0.057 U	0.057 U	0.057 U	0.057 U
Methyl T-Butyl Ether (MTBE)	20		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trans-1,2-Dichloroethene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Butanone (MEK)	4,800		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-105 EV14090080-04 EV14090107-17 9/15/2014	MW-105 EV14120119-01 EV14120162-27 12/16/2014	MW-105 EV15030143-08 3/24/2015	MW-105 EV15060181-06 6/25/2015	MW-106 EV14090091-07 EV14090107-18 9/16/2014	MW-106-Dup EV14090091-11 EV14090107-26 9/16/2014	MW-106 EV14120162-10 12/19/2014	MW-106-Dup EV14120162-12 12/19/2014	MW-106 EV15030127-09 3/24/2015	MW-106-Dup EV15030127-10 3/24/2015	MW-106 EV15060181-01 6/25/2015	MW-106-Dup EV15060181-03 6/25/2015
Cis-1,2-Dichloroethene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexane (k)	480		NA	2.0 U	NA	2.0 U	NA	NA	2.0 U	2.0 U	NA	NA	2.0 U	2.0 U
2,2-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromochloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	200		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	0.38	0.014	2.0 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
Benzene	1.2	0.028	2.0 U	0.028 U	0.028 U	0.028 U	2.0 U	2.0 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U
Dibromomethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	0.080	0.059	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U
4-Methyl-2-Pentanone (MIBK)	640		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	640		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Cis-1,3-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene (PCE)	0.69	0.023	2.0 U	0.023 U	0.023 U	0.023 U	2.0 U	2.0 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U
1,2-Dibromoethane (EDB)	0.01		0.01 U	0.010 U	0.010 U	0.010 U	0.01 U	0.01 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Chlorobenzene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.8	3.0	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	70		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m,p-Xylene (l)	1,600		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Styrene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	4.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene (cumene)	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichloropropane	0.023	0.023	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U
Bromobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Propyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	80		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
T-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
S-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
P-Isopropyltoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3 Dichlorobenzene	320		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	8.1		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Butylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	420		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo 3-Chloropropane	0.0997	0.0997	10 U	0.10 U	0.10 U	0.10 U	10 U	10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Hexachlorobutadiene	0.44		2.0 U	0.069 U	0.069 U	0.069 U	2.0 U	2.0 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U
1,2,3-Trichlorobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
VOCs (µg/L)														
Method EPA-8260SIM (m)														
Vinyl Chloride	0.031	0.031	0.20 U	0.031 U	0.031 U	0.031 U	0.20 U	0.20 U	0.38	0.39	0.031 U	0.031 U	0.031 U	0.031 U
Carbon Tetrachloride	0.23		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chloroform	1.4		0.10 U	0.14 U	0.14 U	0.14 U	0.10 U	0.10 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Trichloroethene (TCE)	2.5		0.020 U	0.054 U	0.054 U	0.054 U	0.020 U	0.054 U	0.054 U	0.054 U	0.054 U	0.054 U	0.054 U	0.054 U
1,2-Dichloropropane	0.50		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Trans-1,3-Dichloropropene	0.34		2.0 U	0.058 U	0.058 U	0.058 U	2.0 U	2.0 U	0.058 U	0.058 U	0.058 U	0.058 U	0.058 U	0.058 U
1,1,2-Trichloroethane	0.59		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibromochloromethane	0.40		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,1,1,2-Tetrachloroethane	1.7		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,1,2,2-Tetrachloroethane	0.17		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,2,4-Trichlorobenzene	1.5		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-105 EV14090080-04 EV14090107-17 9/15/2014	MW-105 EV14120119-01 EV14120162-27 12/16/2014	MW-105 EV15030143-08 3/24/2015	MW-105 EV15060181-06 6/25/2015	MW-106 EV14090091-07 EV14090107-18 9/16/2014	MW-106-Dup EV14090091-11 EV14090107-26 9/16/2014	MW-106 EV14120162-10 12/19/2014	MW-106-Dup EV14120162-12 12/19/2014	MW-106 EV15030127-09 3/24/2015	MW-106-Dup EV15030127-10 3/24/2015	MW-106 EV15060181-01 6/25/2015	MW-106-Dup EV15060181-03 6/25/2015
SVOCs (µg/L)														
Method EPA-8270														
Pyridine	8.0		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
N-Nitrosodimethylamine	1.51	1.51	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 UJ	1.4 U
Phenol	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Aniline	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
Bis(2-Chloroethyl)Ether	0.94	0.94	0.94 U	0.87 U	0.87 U	0.87 U	0.94 U	0.94 U	0.87 U	0.87 U	0.87 U	0.87 U	0.88 UJ	0.88 U
2-Chlorophenol	40		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzyl Alcohol	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
2-Methylphenol	400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bis(2-Chloroisopropyl)Ether	1,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
3&4-Methylphenol (n)	400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitroso-Di-N-Propylamine	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	2.0 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 UJ	1.9 U
Hexachloroethane	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	2.0 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 UJ	1.9 U
Nitrobenzene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
Isophorone	8.4		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
2-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dimethylphenol	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzoic Acid	64,000		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-Chloroethoxy)Methane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
2,4-Dichlorophenol	24		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloroaniline (p-Chloroaniline)	1.89	1.89	2.0 U	1.8 U	1.8 U	1.8 U	2.0 U	2.0 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 UJ	1.8 U
2,6-Dichlorophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloro-3-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorocyclopentadiene	40		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
2,4,6-Trichlorophenol	1.4	0.90	2.0 U	0.83 U	0.83 U	0.83 U	2.0 U	2.0 U	0.83 U	0.83 U	0.83 U	0.83 U	0.84 U	0.84 U
2,4,5-Trichlorophenol	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chloronaphthalene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
2-Nitroaniline	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
Dimethylphthalate	270,000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
2,6-Dinitrotoluene	1.82	1.82	1.8 U	1.7 U	1.7 U	1.7 U	1.8 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 UJ	1.7 U
3-Nitroaniline	--		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U
2,4-Dinitrophenol	32		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibenzofuran	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
2,4-Dinitrotoluene	0.78	0.78	0.78 U	0.72 U	0.72 U	0.72 U	0.78 U	0.78 U	0.72 U	0.72 U	0.72 U	0.72 U	0.73 UJ	0.73 U
2,3,4,6-Tetrachlorophenol	480		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Diethylphthalate	13,000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
4-Chlorophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
4-Nitroaniline	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
4,6-Dinitro-2-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodiphenylamine	3.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.2	3.6	2.0 U	2.0 U	2.0 UJ	5.8
Azobenzene	1.63	1.63	2.0 U	1.5 U	1.5 U	1.5 U	2.0 U	2.0 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 UJ	1.5 U
4-Bromophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
Carbazole	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
Di-N-Butylphthalate	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
Butylbenzylphthalate	8.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U
3,3'-Dichlorobenzidine	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	2.0 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 UJ	1.9 U
Bis(2-Ethylhexyl)Phthalate	1.2	0.81	2.0 U	0.75 U	0.75 U	0.75 U	2.0 U	2.0 U	60	81	0.75 U	0.75 U	0.75 UJ	0.75 U
Di-N-Octylphthalate	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-105 EV14090080-04 EV14090107-17 9/15/2014	MW-105 EV14120119-01 EV14120162-27 12/16/2014	MW-105 EV15030143-08 3/24/2015	MW-105 EV15060181-06 6/25/2015	MW-106 EV14090091-07 EV14090107-18 9/16/2014	MW-106-Dup EV14090091-11 EV14090107-26 9/16/2014	MW-106 EV14120162-10 12/19/2014	MW-106-Dup EV14120162-12 12/19/2014	MW-106 EV15030127-09 3/24/2015	MW-106-Dup EV15030127-10 3/24/2015	MW-106 EV15060181-01 6/25/2015	MW-106-Dup EV15060181-03 6/25/2015
PAHs (µg/L) Method EPA-8270 SIM														
Naphthalene	160		0.034	0.082	0.013 U	0.013 U	0.064	0.074	0.013 U	0.013 U	0.080 J	0.039 J	0.059 J	0.013 J
2-Methylnaphthalene	32		0.020 U	0.020 U	0.02 U	0.020 U	0.055 J	0.079 J	0.052	0.045	0.02 U	0.02 U	0.020 U	0.020 U
1-Methylnaphthalene	1.5		0.020 U	0.020 U	0.02 U	0.020 U	0.080 J	0.12 J	0.22	0.19	0.066	0.063	0.020 U	0.020 U
Acenaphthylene	--		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.02 U	0.02 U	0.020 U	0.020 U
Acenaphthene	650		0.097	0.16	0.12	0.10	0.042	0.056	0.13 J	0.10 J	0.13 J	0.10 J	0.034	0.031
Fluorene	640		0.020 U	0.0090 U	0.0090 U	0.0090 U	0.020 U	0.020 U	0.0090 U	0.0090 U	0.0090 U	0.0090 U	0.0091 U	0.0091 U
Pentachlorophenol	0.23	0.23	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	0.13 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Phenanthrene	--		0.020 U	0.013 U	0.013 U	0.013 U	0.030	0.031	0.013 U	0.025	0.023	0.02	0.013	0.013 U
Anthracene	4,800		0.020 U	0.010	0.012	0.01 U	0.020 U	0.036	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.015
Fluoranthene	86		0.020 U	0.018	0.02	0.018	0.020 U	0.020 U	0.010	0.012	0.0092 U	0.0092 U	0.0092 U	0.0092 U
Pyrene	480		0.020 U	0.015	0.017	0.035	0.020 U	0.020 U	0.01 U	0.011	0.015	0.01 U	0.011 U	0.011 U
Benzo[A]Anthracene	0.00940	0.00940	0.020 U	0.017 U	0.017 U	0.017 U	0.020 U	0.020 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Chrysene	0.00940	0.00940	0.020 U	0.018 U	0.018 U	0.018 U	0.020 U	0.020 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U
Benzo[B]Fluoranthene	0.00730	0.00730	0.020 U	0.0068 U	0.0068 U	0.0068 U	0.020 U	0.020 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U
Benzo[K]Fluoranthene	0.0237	0.0237	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.020 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U
Benzo[A]Pyrene	0.0104	0.0104	0.029 U	0.027 U	0.027 U	0.027 U	0.029 U	0.029 U	0.027 U	0.027 U	0.027 U	0.027 U	0.027 U	0.027 U
Indeno[1,2,3-Cd]Pyrene	0.0164	0.0164	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.020 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
Dibenz[A,H]Anthracene	0.0127	0.0127	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Benzo[G,H,I]Perylene	--		0.020 U	0.019 U	0.019 U	0.019 U	0.020 U	0.020 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
cPAH TEQ (o)	0.10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-107 EV14090107-19 9/17/2014	MW-107 EV14120119-05 EV14120162-24 12/16/2014	MW-107 EV15030154-04 3/26/2015	MW-107 EV15060188-03 6/25/2015	MW-108 EV14090107-20 9/17/2014	MW-108 EV14120119-03 EV14120162-28 EV14120143-02 12/16/2014	MW-108 EV15030143-05 3/25/2015	MW-108 EV15060188-01 6/25/2015	MW-109 EV14090091-08 EV14090107-21 9/16/2014	MW-109 EV14120162-01 12/19/2014	MW-109 EV15030127-06 3/23/2015	MW-109 EV15060161-03 6/23/2015
TOTAL PETROLEUM HYDROCARBONS (µg/L)														
HCID														
Gas Range	--		130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U
Diesel Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U
Oil Range	--		310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U
NWTPH-G (c)	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx														
Diesel Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil Range (w/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil Range (wo/SGC)	500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	3.6	2.7	3.3	4.1	4.8	5.1	6.6	5.2	1.0 U	0.45 U	0.45 U	0.45 U
Barium	1,000		62	56	60	56	53	59	60	53	11	11	11	9.1
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		38,000	36,000	39,000	35,000	36,000	40,000	43,000	37,000	26,000	28,000	31,000	25,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	10 U	NS	NS	NS	10 U	NS	NS	NS
Iron	300		24,000	22,000	24,000	22,000	29,000	32,000	35,000	31,000	50 U	50 U	92	50 U
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U
Magnesium	--		13,000	13,000	13,000	12,000	12,000	14,000	15,000	13,000	9900	9500	11,000	8800
Manganese	50		2400	1900	1900	2000	2300	2200	2400	2200	860	110	390	57
Potassium	--		NS	NS	7400	6700	NS	NS	7700	6900	NS	NS	4800	3800
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		21,000	20,000	21,000	18,000	16,000	18,000	18,000	16,000	14,000	13,000	14,000	12,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.20 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
TOTAL METALS (µg/L)														
Methods EPA-200.8/EPA-7470/EPA-7196														
Arsenic	0.45	0.45	3.5	3.4	2.5	3.5	4.5	4.8	6.6	3.9	1.0 U	0.45 U	0.51	0.45 U
Barium	1,000		63	60	62	57	53	55	61	53	13	11	12	9.0
Cadmium	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	--		39,000	38,000	39,000	36,000	37,000	39,000	44,000	38,000	27,000	29,000	32,000	25,000
Chromium (d)	57		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI) (e)	10		10 U	NS	NS	NS	10 U	NS	NS	NS	10 U	NS	NS	NS
Iron	300		24,000	24,000	24,000	23,000	29,000	30,000	35,000	31,000	280	92	150	50 U
Lead	0.54		1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U	1.0 U	0.28 U	0.28 U	0.28 U
Magnesium	--		14,000	13,000	13,000	13,000	13,000	14,000	16,000	13,000	10,000	9600	11,000	8400
Manganese	50		2400	2000	2000	2100	2400	2100	2400	2100	890	150	400	58
Potassium	--		NS	NS	7400	6900	NS	NS	7800	7000	NS	NS	4800	3700
Selenium	5.0		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	0.32		1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U
Sodium	20,000		22,000	21,000	21,000	19,000	17,000	18,000	18,000	16,000	15,000	13,000	14,000	12,000
Mercury	0.11	0.11	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U	0.20 U	0.11 U	0.11 U	0.11 U
CONVENTIONALS (mg/L)														
Total Dissolved Solids (SM2540C)	--		180	280	220	240	260	300	260	220	200	140	170	210
Chloride (EPA-300.0)	230		32	18	19	19	19	18	17	18	10	9.5	11	11
Fluoride (EPA-300.0)	0.64		0.16 U	0.22	0.16 U	0.16 U	0.23	0.25	0.16 U	0.16 U	0.28	0.16 U	0.16 U	0.16 U
Nitrate as N (EPA-300.0)	10		0.034 U	0.034 U	0.034 U	0.034 U	0.059	0.034 U	0.034 U	0.034 U	0.94	0.29	0.50	1.7
Nitrite as N (EPA-300.0)	1.0		0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.14	0.043 U	0.043 U	0.043 U
Sulfate (EPA-300.0)	--		0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	13	16	7.6	14
Ammonia (EPA-350.1)	--		4.0	3.6	3.6	3.3	3.0	2.8	2.7	2.6	0.18	0.15	0.29	0.056
Alkalinity as CaCO ₃ , Total (SM2320B)	--		220	200	200	200	210	210	220	200	130	110	140	110
Bicarbonate as CaCO ₃ (SM2320B)	--		220	200	200	200	210	210	220	200	130	110	140	110
Total Organic Carbon (TOC) (SM5310C)	--		4.6	3.5	4.1	3.8	5.2	4.7	4.8	5.3	1.1	1.2	1.4	0.97

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-107 EV14090107-19 9/17/2014	MW-107 EV14120119-05 EV14120162-24 12/16/2014	MW-107 EV15030154-04 3/26/2015	MW-107 EV15060188-03 6/25/2015	MW-108 EV14090107-20 9/17/2014	MW-108 EV14120119-03 EV14120162-28 EV14120143-02 12/16/2014	MW-108 EV15030143-05 3/25/2015	MW-108 EV15060188-01 6/25/2015	MW-109 EV14090091-08 EV14090107-21 9/16/2014	MW-109 EV14120162-01 12/19/2014	MW-109 EV15030127-06 3/23/2015	MW-109 EV15060161-03 6/23/2015
FIELD PARAMETERS														
Temperature (°C)	--		15.46	14.71	16.77	16.89	15.96	14.58	15.86	17.16	18.46	15.21	15.43	15.87
Specific Conductivity (uS/cm)	--		1115	362	1158	439	415	384	639	466	270	213	341	207
Dissolved Oxygen (mg/L)	--		1.12	0.69	0.30	0.14	0.57	1.61	0.10	0.18	0.90	2.57	2.08	4.46
pH (S.U.)	6.5 to 8.5		5.81	6.28	5.68	6.34	5.46	6.26	6.35	6.28	5.73	6.59	6.00	6.48
Oxidation Reduction Potential (mV)	--		-46.4	-85.9	-82.0	-88.7	84.6	-80.3	74.2	-862	18.3	16.0	51.1	66.8
Turbidity (NTU)	--		3.7	4.65	0.59	0.95	16.4	6.79	0.39	1.11	61.8	9.20	16.05	1.65
PESTICIDES (µg/L)														
Method EPA-8081														
hexachlorocyclohexane, alpha (A-BHC)	0.01	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
G-BHC (Lindane)	0.019	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
hexachlorocyclohexane; beta (B-BHC)	0.01	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
Heptachlor	0.01	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
hexachlorocyclohexane, delta (D-BHC)	0.012	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
Aldrin	0.01	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
Heptachlor Epoxide	0.01	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
Chlordane	0.20	0.20	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
Endosulfan I (g)	0.056		0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
4,4'-DDE	0.01	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
Dieldrin	0.01	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
Endrin	0.01	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
4,4'-DDD	0.01	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
Endosulfan II (g)	0.056		0.013 U	0.010 U	0.026	0.019	0.011 U	0.011 U	0.010 U	0.011	0.018 U	0.021 U	0.029	0.013
4,4'-DDT	0.01	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
Endrin Aldehyde (h)	0.01	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
Endosulfan Sulfate (g)	0.056		0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
Methoxychlor	0.030	0.01	0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.011 U
Hexachlorobenzene (i)	0.01	0.01	2.0 U	0.010 U	0.010 U	0.010 U	2.0 U	0.011 U	0.010 U	0.010 U	2.0 U	0.010 U	0.0099 U	0.011 U
Toxaphene	0.50	0.50	0.50 U	0.50 U	0.50 U	0.50 U	0.51 U	0.52 U	0.50 U	0.50 U	0.52 U	0.50 U	0.50 U	0.52 U
PCBs (µg/L)														
Method EPA-8082														
PCB-1016	0.005	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0051 U	0.0050 U	0.0050 U	0.0052 U	0.0050 U	0.0050 U	0.0052 U
PCB-1221	--		0.01 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U
PCB-1232	--		0.0050 U	0.0050 U	0.0050 U	0.017	0.0051 U	0.0051 U	0.0050 U	0.018	0.0052 U	0.0050 U	0.0050 U	0.0052 U
PCB-1242	--		0.021	0.018	0.0092	0.0050 U	0.035	0.034	0.0099	0.0050 U	0.0052 U	0.0050 U	0.0050 U	0.0052 U
PCB-1248	--		0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0051 U	0.0050 U	0.0050 U	0.0052 U	0.0050 U	0.0050 U	0.0052 U
PCB-1254	0.005	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0051 U	0.0050 U	0.0050 U	0.0052 U	0.0050 U	0.0050 U	0.0052 U
PCB-1260	0.014	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0051 U	0.0051 U	0.0050 U	0.0050 U	0.0052 U	0.0050 U	0.0050 U	0.0052 U
Total PCBs (j)	0.10		0.021	0.018	0.0092	0.017	0.035	0.034	0.0099	0.018	ND	ND	ND	ND
VOCs (µg/L)														
Method EPA-8260														
Dichlorodifluoromethane	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	11		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Disulfide	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	7,200		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
1,1-Dichloroethene	0.057	0.014	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U
Methylene Chloride	4.6	0.68	5.0 U	0.68 U	0.68 U	0.68 U	5.0 U	0.68 U	0.68 U	0.68 U	5.0 U	0.68 U	0.68 U	0.68 U
Acrylonitrile	0.0572	0.0572	10 U	0.057 U	0.057 U	0.057 U	10 U	0.057 U	0.057 U	0.057 U	10 U	0.057 U	0.057 U	0.057 U
Methyl T-Butyl Ether (MTBE)	20		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trans-1,2-Dichloroethene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Butanone (MEK)	4,800		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-107 EV14090107-19 9/17/2014	MW-107 EV14120119-05 EV14120162-24 12/16/2014	MW-107 EV15030154-04 3/26/2015	MW-107 EV15060188-03 6/25/2015	MW-108 EV14090107-20 9/17/2014	MW-108 EV14120119-03 EV14120162-28 EV14120143-02 12/16/2014	MW-108 EV15030143-05 3/25/2015	MW-108 EV15060188-01 6/25/2015	MW-109 EV14090091-08 EV14090107-21 9/16/2014	MW-109 EV14120162-01 12/19/2014	MW-109 EV15030127-06 3/23/2015	MW-109 EV15060161-03 6/23/2015
Cis-1,2-Dichloroethene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexane (k)	480		NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U
2,2-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromochloromethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	200		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	0.38	0.014	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U	2.0 U	0.014 U	0.014 U	0.014 U
Benzene	1.2	0.028	2.0 U	0.028 U	0.028 U	0.028 U	2.0 U	0.028 U	0.028 U	0.028 U	2.0 U	0.028 U	0.028 U	0.028 U
Dibromomethane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	0.080	0.059	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U
4-Methyl-2-Pentanone (MIBK)	640		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	640		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Cis-1,3-Dichloropropene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichloropropane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene (PCE)	0.69	0.023	2.0 U	0.023 U	0.023 U	0.023 U	2.0 U	0.023 U	0.023 U	0.023 U	2.0 U	0.023 U	0.023 U	0.023 U
1,2-Dibromoethane (EDB)	0.01		0.01 U	0.010 U	0.010 U	0.010 U	0.01 U	0.010 U	0.010 U	0.010 U	0.01 U	0.010 U	0.010 U	0.010 U
Chlorobenzene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	70		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m,p-Xylene (l)	1,600		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Styrene	100		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	4.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene (cumene)	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichloropropane	0.023	0.023	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U
Bromobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Propyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	80		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
T-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
S-Butyl Benzene	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
P-Isopropyltoluene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3 Dichlorobenzene	320		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	8.1		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Butylbenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	420		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo 3-Chloropropane	0.0997	0.0997	10 U	0.10 U	0.10 U	0.10 U	10 U	0.10 U	0.10 U	0.10 U	10 U	0.10 U	0.10 U	0.10 U
Hexachlorobutadiene	0.44		2.0 U	0.069 U	0.069 U	0.069 U	2.0 U	0.069 U	0.069 U	0.069 U	2.0 U	0.069 U	0.069 U	0.069 U
1,2,3-Trichlorobenzene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
VOCs (µg/L)														
Method EPA-8260SIM (m)														
Vinyl Chloride	0.031	0.031	0.20 U	0.031 U	0.031 U	0.031 U	0.20 U	0.031 U	0.031 U	0.031 U	0.20 U	0.031 U	0.031 U	0.031 U
Carbon Tetrachloride	0.23		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chloroform	1.4		0.10 U	0.14 U	0.14 U	0.14 U	0.10 U	0.14 U	0.14 U	0.14 U	0.57	0.14 U	0.14 U	0.14 U
Trichloroethene (TCE)	2.5		0.020 U	0.054 U	0.054 U	0.054 U	0.020 U	0.054 U	0.054 U	0.054 U	0.020 U	0.054 U	0.054 U	0.054 U
1,2-Dichloropropane	0.50		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Trans-1,3-Dichloropropene	0.34		2.0 U	0.058 U	0.058 U	0.058 U	2.0 U	0.058 U	0.058 U	0.058 U	2.0 U	0.058 U	0.058 U	0.058 U
1,1,2-Trichloroethane	0.59		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibromochloromethane	0.40		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,1,1,2-Tetrachloroethane	1.7		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,1,2,2-Tetrachloroethane	0.17		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
1,2,4-Trichlorobenzene	1.5		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-107 EV14090107-19 9/17/2014	MW-107 EV14120119-05 EV14120162-24 12/16/2014	MW-107 EV15030154-04 3/26/2015	MW-107 EV15060188-03 6/25/2015	MW-108 EV14090107-20 9/17/2014	MW-108 EV14120119-03 EV14120162-28 EV14120143-02 12/16/2014	MW-108 EV15030143-05 3/25/2015	MW-108 EV15060188-01 6/25/2015	MW-109 EV14090091-08 EV14090107-21 9/16/2014	MW-109 EV14120162-01 12/19/2014	MW-109 EV15030127-06 3/23/2015	MW-109 EV15060161-03 6/23/2015
SVOCs (µg/L) Method EPA-8270														
Pyridine	8.0		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodimethylamine	1.51	1.51	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U
Phenol	2,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Aniline	7.7		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bis(2-Chloroethyl)Ether	0.94	0.94	0.94 U	0.87 U	0.89 U	0.87 U	0.94 U	0.87 U	0.87 U	0.87 U	0.94 U	0.89 U	0.89 U	0.87 U
2-Chlorophenol	40		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzyl Alcohol	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Methylphenol	400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bis(2-Chloroisopropyl)Ether	1,400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
3&4-Methylphenol (n)	400		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitroso-Di-N-Propylamine	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Hexachloroethane	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Nitrobenzene	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Isophorone	8.4		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dimethylphenol	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzoic Acid	64,000		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-Chloroethoxy)Methane	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dichlorophenol	24		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloroaniline (p-Chloroaniline)	1.89	1.89	2.0 U	1.8 U	1.8 U	1.8 U	2.0 U	1.8 U	1.8 U	1.8 U	2.0 U	1.8 U	1.8 U	1.8 U
2,6-Dichlorophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloro-3-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorocyclopentadiene	40		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4,6-Trichlorophenol	1.4	0.90	2.0 U	0.83 U	0.85 U	0.83 U	2.0 U	0.83 U	0.83 U	0.83 U	2.0 U	0.85 U	0.85 U	0.83 U
2,4,5-Trichlorophenol	800		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chloronaphthalene	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Nitroaniline	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dimethylphthalate	270,000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,6-Dinitrotoluene	1.82	1.82	1.8 U	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U
3-Nitroaniline	--		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2,4-Dinitrophenol	32		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibenzofuran	16		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dinitrotoluene	0.78	0.78	0.78 U	0.72 U	0.73 U	0.72 U	0.78 U	0.72 U	0.72 U	0.72 U	0.78 U	0.73 U	0.73 U	0.72 U
2,3,4,6-Tetrachlorophenol	480		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Diethylphthalate	13,000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Nitroaniline	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4,6-Dinitro-2-Methylphenol	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodiphenylamine	3.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Azobenzene	1.63	1.63	2.0 U	1.5 U	1.5 U	1.5 U	2.0 U	1.5 U	1.5 U	1.5 U	2.0 U	1.5 U	1.5 U	1.5 U
4-Bromophenyl-Phenylether	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbazole	--		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Di-N-Butylphthalate	1,600		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Butylbenzylphthalate	8.3		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
3,3'-Dichlorobenzidine	2.0	2.0	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Bis(2-Ethylhexyl)Phthalate	1.2	0.81	2.0 U	0.75 U	0.76 U	0.75 U	2.0 U	0.75 U	0.75 U	0.75 U	2.0 U	0.76 U	0.76 U	0.75 U
Di-N-Octylphthalate	160		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

**TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location: Laboratory ID(S): Sample Date:	Screening Levels (a)	Targeted ALS QLs (b)	MW-107 EV14090107-19 9/17/2014	MW-107 EV14120119-05 EV14120162-24 12/16/2014	MW-107 EV15030154-04 3/26/2015	MW-107 EV15060188-03 6/25/2015	MW-108 EV14090107-20 9/17/2014	MW-108 EV14120119-03 EV14120162-28 EV14120143-02 12/16/2014	MW-108 EV15030143-05 3/25/2015	MW-108 EV15060188-01 6/25/2015	MW-109 EV14090091-08 EV14090107-21 9/16/2014	MW-109 EV14120162-01 12/19/2014	MW-109 EV15030127-06 3/23/2015	MW-109 EV15060161-03 6/23/2015
PAHs (µg/L) Method EPA-8270 SIM														
Naphthalene	160		0.020 U	0.060	0.014 U	0.013 U	0.020 U	0.053	0.016	0.013 U	0.020 U	0.014 U	0.030	0.11
2-Methylnaphthalene	32		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.11
1-Methylnaphthalene	1.5		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.036
Acenaphthylene	--		0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U
Acenaphthene	650		0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U
Fluorene	640		0.020 U	0.0090 U	0.017	0.0090 U	0.020 U	0.018	0.016	0.0090 U	0.020 U	0.0092 U	0.0092 U	0.0090 U
Pentachlorophenol	0.23	0.23	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U
Phenanthrene	--		0.020 U	0.015	0.015	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.014 U	0.014 U	0.013 U
Anthracene	4,800		0.020 U	0.015	0.016	0.011	0.020 U	0.013	0.011	0.01 U	0.020 U	0.012	0.01 U	0.01 U
Fluoranthene	86		0.020 U	0.0092 U	0.0093 U	0.0092 U	0.020 U	0.0092 U	0.0092 U	0.0092 U	0.020 U	0.0093 U	0.0093 U	0.0092 U
Pyrene	480		0.020 U	0.01 U	0.011 U	0.01 U	0.020 U	0.01 U	0.01 U	0.01 U	0.020 U	0.011 U	0.011 U	0.01 U
Benzo[A]Anthracene	0.00940	0.00940	0.020 U	0.017 U	0.017 U	0.017 U	0.020 U	0.017 U	0.017 U	0.017 U	0.020 U	0.017 U	0.017 U	0.017 U
Chrysene	0.00940	0.00940	0.020 U	0.018 U	0.018 U	0.018 U	0.020 U	0.018 U	0.018 U	0.018 U	0.020 U	0.018 U	0.018 U	0.018 U
Benzo[B]Fluoranthene	0.00730	0.00730	0.020 U	0.0068 U	0.0068 U	0.0068 U	0.020 U	0.0068 U	0.0068 U	0.0068 U	0.020 U	0.0068 U	0.0068 U	0.0068 U
Benzo[K]Fluoranthene	0.0237	0.0237	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U	0.020 U	0.013 U	0.013 U	0.013 U
Benzo[A]Pyrene	0.0104	0.0104	0.029 U	0.027 U	0.027 U	0.027 U	0.029 U	0.027 U	0.027 U	0.027 U	0.029 U	0.027 U	0.027 U	0.027 U
Indeno[1,2,3-Cd]Pyrene	0.0164	0.0164	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U	0.020 U	0.014 U	0.014 U	0.014 U
Dibenz[A,H]Anthracene	0.0127	0.0127	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U
Benzo[G,H,I]Perylene	--		0.020 U	0.019 U	0.019 U	0.019 U	0.020 U	0.019 U	0.019 U	0.019 U	0.020 U	0.019 U	0.019 U	0.019 U
cPAH TEQ (o)	0.10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 9
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS (2014-2015)
CLOSED CITY OF YAKIMA LANDFILL SITE

°C = degrees Celsius
 cPAH = carcinogenic polycyclic aromatic hydrocarbons
 EPA = U.S. Environmental Protection Agency
 mg/L = milligrams per liter
 mV = millivolts
 NA = not analyzed
 ND = not detected
 NS = not sampled
 NTU = nephelometric turbidity units
 PAHs = polycyclic aromatic hydrocarbons
 PCBs = polychlorinated biphenyls

PQL = practical quantitation limit
 QL = quantitation limit
 SGC = silica gel cleanup.
 S.U. = standard units
 SVOCs = semivolatile organic compounds
 TEQ = toxicity equivalency
 VOCs = volatile organic compounds
 w/SGC = with silica gel cleanup
 wo/SGC = without silica gel cleanup
 µg/L = micrograms per liter
 µS/cm = microsiemens per centimeter

U = Indicates the compound was not detected at the reported concentration.

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

Bold = Detected compound.

Green Box = Exceedance of screening level (see Tables 4 through 6)

- (a) Screening levels developed using methodology presented in the draft Site work plan (Landau Associates 2014) and subsequent revisions per discussions with Ecology (see Tables 6 through 8).
- (b) Targeted laboratory QL (i.e., laboratory PQL) used for results comparison when the laboratory's standard reporting limit could not meet the screening level (see Table 8).
- (c) Screening level is 1,000 µg/L when benzene is not detectable, 800 µg/L when benzene is present.
- (d) Screening level presented is for Chromium III.
- (e) Hexavalent chromium was not analyzed at all locations during the September sampling event; based on the September results and holding time requirements, hexavalent chromium was not sampled for during the December sampling event.
- (f) pH strips used to measure pH value, due to field meter issues.
- (g) Endosulfan isomers compared to screening level based on total Endosulfan criteria.
- (h) Endrin isomers compared to screening level based on total Endrin criteria.
- (i) Hexachlorobenzene analyzed by EPA Method 8270 for September sampling event.
- (j) Total PCBs represents the sum of detected concentrations of the seven individual PCB Aroclors.
- (k) Hexane was not analyzed for during the September sampling event due to issues at the laboratory.
- (l) m,p-xylene results compared to m-or p-xylene screening levels (both individual compounds have the same screening level).
- (m) Compounds analyzed by EPA Method 8260 for September sampling event.
- (n) 3&4-Methylphenol compared to 3-Methylphenol screening level (the more conservative value of the two individual compound screening levels).
- (o) cPAH TEQ calculated following the method outlined in WAC 173-340-708(8)(e).

**TABLE 10A
LANDFILL GAS SURVEY RESULTS - JANUARY 2015
CLOSED CITY OF YAKIMA LANDFILL SITE**

Location	Time	Purged Volume (ft ³)	Stabilization Time (s)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Balance (%)	H ₂ (ppm)	CO (ppm)	H ₂ S (ppm)	Differential Pressure (inch WC)	Notes
Ambient Air	10:00	--	--	0.0	0.2	20.6	79.1	low	0	0	--	
GP-1	10:01	0.545	262	1.41	17.7	0.0	81.4	low	0	0	0.9	Peak CH ₄ = 1.4
GP-2	14:43	0.38	104	0.0	6.4	12.3	81.2	low	0	0	0.0	
GP-3	15:17	0.37	155	9.5	17.5	0.0	73.2	low	0	0	0.0	
GP-4	14:51	0.60	151	15.8	17.7	0.0	66.5	low	0	0	0.0	
GP-5	12:02	0.72	130	13.6	17.4	0.1	68.9	low	0	0	0.0	
GP-6	11:27	0.80	120	0.0	14.6	5.4	79.9	low	0	0	0.4	
GP-7	14:30	0.47	139	0.0	1.0	20.0	79.0	low	0	0	0.0	
GP-8	14:13	0.51	405	0.0	1.4	19.4	79.0	low	0	0	0.0	
GP-9	14:03	0.49	125	0.0	3.1	16.5	80.1	low	0	0	0.0	
GP-11	15:37	0.97	137	36.4	35.7	0.0	27.8	low	0	0	0.0	
GP-12	12:13	0.99	152	10.3	21.7	0.0	67.8	low	0	0	0.0	
GP-13	10:25	0.64	144	9.9	28.5	0.0	61.4	low	0	0	0.8	Peak CH ₄ = 9.9
GP-14	16:53	0.53	94	0.0	2.0	18.3	79.6	low	0	0	0.0	
GP-15	16:41	0.61	114	0.0	1.2	18.9	79.8	low	0	0	0.1	
GP-16	15:50	0.69	126	0.1	1.9	18.2	80.0	low	0	0	0.0	
GP-17	16:15	0.69	84	0.0	1.7	18.3	80.0	low	0	0	0.0	
GP-18	16:25	0.71	98	0.1	1.2	18.9	79.7	low	0	0	0.0	
GP-19	11:47	0.92	120	67.3	37.8	0.1	0.0	low	0	0	0.5	
GP-20	11:40	0.88	160	57.2	37.6	0.0	4.9	low	0	19	0.0	
GP-23	15:05	0.18	267	16.6	21.3	0.0	62.1	low	0	0	0.0	
GP-24	10:44	0.17	198	0.1	21.2	0.7	78.0	low	0	0	0.0	
GP-25	10:56	0.18	164	0.9	23.4	0.0	75.7	low	0	0	0.0	
GP-26	11:16	0.18	149	11.6	23.3	0.0	65.1	low	0	0	0.0	

Notes: GP-10 not located and assumed destroyed.

CH₄ = methane
CO = carbon monoxide
CO₂ = carbon dioxide
ft³ = cubic feet
H₂ = hydrogen

H₂S = hydrogen sulfide
O₂ = oxygen
ppm = parts per million
s = seconds
WC = water column

TABLE 10B
LANDFILL GAS SURVEY RESULTS - JUNE 2015
CLOSED CITY OF YAKIMA LANDFILL SITE

Location	Time	Purged Volume (ft ³)	Stabilization Time (s)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Balance (%)	H ₂ (ppm)	CO (ppm)	H ₂ S (ppm)	Differential Pressure (inch WC)	Notes
Ambient Air	9:30	--	--	0.0	0.0	20.7	79.3	low	0	0	--	
GP-1	9:35	0.545	82	29.7	19.8	0.0	50.6	low	1	0	0.0	
GP-2	14:42	0.38	50	0.0	8.7	9.0	82.3	low	2	0	-1.4	
GP-3	14:02	0.37	90	7.9	14.7	1.3	76.1	low	1	0	0.0	
GP-4	14:50	0.60	50	7.5	17.7	0.0	74.7	low	2	0	-1.0	
GP-5	14:17	0.72	55	21	19.4	0	59.6	low	0	1	0.1	
GP-6	11:24	0.80	34	0.0	17.1	4.3	78.6	low	4	0	0.0	
GP-7	12:27	0.47	27	0.0	1.2	14.4	79.5	low	5	0	0.0	
GP-8	12:34	0.51	42	0.0	5.3	15.3	79.4	low	5	0	0.0	
GP-9	12:52	0.49	42	0.0	4.0	17.7	78.3	low	6	0	0.1	
GP-11	9:52	0.97	49	39.6	32.8	0.2	27.1	low	2	0	0.0	
GP-12	14:42	0.99	48	13.1	20	0.1	66.8	low	0	7	0.0	
GP-13	10:55	0.64	32	12.9	27.6	0.1	59.4	low	2	0	0.0	
GP-14	10:48	0.53	80	0.0	2.9	17.2	79.9	low	0	0	-0.7	CO peak = 2ppm
GP-15	11:01	0.61	70	0.0	2.1	17	80.8	low	0	0	-0.4	
GP-16	13:14	0.69	55	0.0	0.8	18.7	80.4	low	0	0	-1.1	
GP-17	9:58	0.69	60	0.0	1.8	16.7	80.5	low	0	0	-1.0	
GP-18	10:24	0.71	60	0.0	1.4	18.2	80.3	low	0	0	-1.1	
GP-19	13:04	0.92	69	63.0	36.8	0.1	0.2	low	0	8	0.0	
GP-20	13:20	0.88	76	58.7	34.9	0.0	6.4	low	0	19	0.0	
GP-23	14:27	0.18	130	19.5	19.5	0.0	60.9	low	2	0	0.0	
GP-24	10:30	0.17	43	1.5	21.7	0.1	76.7	low	1	0	0.0	
GP-25	10:45	0.18	39	4.7	24.9	0.1	70.2	low	3	0	0.0	
GP-26	11:08	0.18	49	6.3	17.3	0.2	76.2	low	2	0	0.0	
GP-28	11:44	0.135	52	0.0	21.2	0.4	77.9	low	4	0	0.0	
GP-29	12:07	0.143	23	0.0	4.5	15.9	79.7	low	5	0	0.0	
GP-30	12:18	0.148	29	0.0	13.5	7.6	78.8	low	5	0	0.0	
GP-31	12:04	0.121	70	0.0	10.1	9.2	80.7	low	0	0	0.3	

Notes: GP-10 not located and assumed destroyed.
 GP-27 was could not be installed at the planned location, only soil sample for chemical analysis was collected at the planned location.

CH₄ = methane
 CO = carbon monoxide
 CO₂ = carbon dioxide
 ft³ = cubic feet
 H₂ = hydrogen

H₂S = hydrogen sulfide
 O₂ = oxygen
 ppm = parts per million
 s = seconds
 WC = water column

TABLE 11
SOIL CONTAMINANTS OF CONCERN EVALUATION
CLOSED CITY OF YAKIMA LANDFILL SITE

Chemical of Potential Concern in Soil	Location	Result	Depth Interval (ft BGS)	SL [Protection of GW (3-Phase Model) using SW Criteria] (mg/kg)	SL [Protection of GW (3-Phase Model) using DW Criteria] (mg/kg)	Direct Contact Pathway Criteria (mg/kg)	Detected in Off Site MWs (Y/N)?	Site-Specific Soil COC (Y/N)?
4,4'-DDD	MW-103	0.012 mg/kg	20.5-21.5	0.009	0.28	4.2	N	N
N-nitrosodiphenylamine	MW-106	0.11 mg/kg	13.5-14.5	0.10	0.53	200	N	N

BGS = below ground surface
COC = contaminant of concern
DW = drinking water
ft = feet
GW = groundwater
mg/kg = milligrams per kilogram
MW = monitoring well
SL = screening level
SW = surface water
Y/N = yes/no

TABLE 12
GROUNDWATER CONTAMINANTS OF CONCERN EVALUATION
CLOSED CITY OF YAKIMA LANDFILL SITE

Chemical of Potential Concern	Above Original SL (See Table 6)			Revised SL	Highest Site Detection	Location	Detections Above Revised SL ^a (Y/N)?	Site COC (Y/N)?	Notes
	On Site (Y/N)?	Off Site (Y/N)?	At River (Y/N)?						
Arsenic (dissolved)	Y	Y	Y	NA	NA	NA	NA	Y	Area-wide issue; reducing conditions
Iron (dissolved)	Y	Y	Y	NA	NA	NA	NA	Y	Area-wide issue; reducing conditions
Manganese (dissolved)	Y	Y	Y	NA	NA	NA	NA	Y	Area-wide issue; reducing conditions
Sodium (dissolved)	Y	Y	N	NA	NA	NA	NA ^b	Y	Area-wide issue; reducing conditions
pH	Y	Y	Y	NA	NA	NA	NA ^b	Y	Area-wide issue; reducing conditions
Nitrate	N	Y	N	NA	NA	NA	NA ^b	Y	One hydraulically downgradient, off site exceedance
Vinyl chloride	Y	N	N	0.20 µg/L	0.38 µg/L	MW-106	Y	Y	One Site location only
N-nitrosodiphenylamine	Y	N	N	18 µg/L	4.2 µg/L	MW-106	N	N	One Site location only; two quarters
Bis(ethylhexyl)phthalate (BEHP)	Y	Y	N	NA	NA	NA	NA	N	Sporadic exceedances (Site, hydraulically upgradient, hydraulically downgradient); two quarters only (September and December 2014) - likely a laboratory cross contaminant
4,4'-DDD	Y	N	N	0.3 µg/L	0.15 µg/L	MW-103	N	N	One Site location only
4,4'-DDT	Y	N	N	0.3 µg/L	0.090 µg/L	MW-103	N	N	One Site location only
Endosulfan II	Y	N	N	96 µg/L	0.068 µg/L	MW-103	N	N	One Site location only

^a Revised SL based on protection of drinking water criteria only if contaminant of potential concern not identified off site and/or at the river

^b Chemical-specific SL originally established based on protection of drinking water criteria

COC = contaminant of concern

µg/L = micrograms per liter

NA = not applicable

SL = screening level

Y/N = yes/no

**TABLE 13
CONCEPTUAL SITE MODEL EVALUATION
CLOSED CITY OF YAKIMA LANDFILL SITE**

Potential COC Pathways	Pathway complete (Y/N?)	Potential Receptors (Y/N?)			Pathway/ Receptor Management
		Commercial/ Industrial Worker	Construction Worker	Terrestrial Plants and Animals	
Ingestion of COCs in groundwater	N ¹	N ¹	N ¹	N ²	No current use of site groundwater as drinking water; deed restrictions/ordinances restricting future use of groundwater as drinking water. Long-term groundwater monitoring will be required.
Impacted groundwater discharge to surface water	Y ³	N	N	Y	Dissolved iron, manganese, and sodium criteria based on drinking water aesthetics, dissolved arsenic below drinking water criteria at the river; restrictions on use of groundwater. Long-term groundwater monitoring will be required.
Direct contact with and/or ingestion of contaminated soil/MSW	Y	Y	Y	Y ²	Capping/containment through redevelopment and deed restrictions eliminate pathway.
Contaminated soil transport via stormwater runoff to surface water	Y	N	N	N	Stormwater current infiltrates through unpaved area of investigation, limiting stormwater runoff. Surface predominately comprises wood debris at the Site, available surface soil limited. Redevelopment strategies will contain the Site and eventually eliminate pathway.
Soil vapor/LFG	Y	Y	Y	N	Pathway will be managed through mitigation associated with Site redevelopment. Long-term monitoring will likely be required as part of the mitigation strategy.
Leaching of contaminants from soil/MSW to groundwater	Y	N ¹	N ¹	N ²	Restrictions on the use of groundwater and containment through development will help eliminate pathway. Soil and groundwater data evaluation empirically demonstrates that leaching from soil/MSW to groundwater is limited.

¹ Based on no current use, and the future restricted use of groundwater as drinking water at the Site

² Based on the results of the Terrestrial Ecological Evaluation (TEE; Attachment 1) and the containment/capping associated with future Site redevelopment

³ Limited to select dissolved metals (arsenic, iron, manganese, and sodium)

COC = contaminant of concern

LFG = landfill gas

MSW = municipal solid waste

Y/N = yes/no

Historical Investigation Data Summary

TABLE A-1
HISTORICAL FIELD PARAMETER MEASUREMENTS
CLOSED CITY OF YAKIMA MILL SITE
YAKIMA, WASHINGTON

Monitoring Well ID	Date Measured	pH (standard units)	Specific Conductance (micro mhos/cm)	Temperature (°C)
MW-1	7/29/1998	6.57	274	14.3
MW-3	7/29/1998	6.77	1770	17.1
MW-4	7/29/1998	6.54	318	15.0
MW-5	7/28/1998	7.08	359	16.4
MW-6	7/28/1998	6.59	325	16.4
MW-7	7/28/1998	6.64	643	17.1
MW-8	7/28/1998	6.84	611	18.1
MW-9	7/29/1998	6.58	253	16.1
MW-10	7/28/1998	6.91	348	14.1

PARAMETERS	Units	Analytical Method	Groundwater Regulatory Standards				MW-7 02/06/08	MW-7D 02/06/08	MW-8 02/06/08	MW-8D**** 8/13/2008	MW-9A 03/25/08	TRIP BLANK 02/05/08	TRIP BLANK 03/25/08	TRIP BLANK 08/13/08
			MCL	MTCA A	MTCA B carcin.	non-carc.								
FIELD DATA														
Conductivity	µmhos/cm		700	**										
pH (units)	std units		6.5-8.5	**										
Temperature (C)	Celsius					15.77	--	15.23	--	14.70	--	--	--	
Dissolved Oxygen (mg/L)	mg/L					0.9	--	3.61	--	3.12	--	--	--	
TOTAL PETROLEUM HYDROCARBONS														
Diesel Range Hydrocarbons	mg/L	NWTPH-Dx			0.5	0.25	U	0.25	U	0.25	U	--	--	
Motor Oil	mg/L	NWTPH-Dx			0.5	0.50	U	0.50	U	0.50	U	--	--	
Gasoline Range Hydrocarbons	mg/L	NWTPH-Gx			1	0.25	U	0.25	U	0.25	U	0.25	U	
Benzene	µg/L	SW8021BMod	5		5	1.0	U	1.0	U	1.0	U	1.0	U	
Toluene	µg/L	SW8021BMod	1000		1000	1.0	U	1.0	U	1.0	U	1.0	U	
Ethylbenzene	µg/L	SW8021BMod	700		700	1.0	U	1.0	U	1.0	U	1.0	U	
m,p-Xylene	µg/L	SW8021BMod	10000	*XY	1000	*XY		1600		1.0	U	1.0	U	
o-Xylene	µg/L	SW8021BMod	10000	*XY	1000	*XY		1600		1.0	U	1.0	U	
CONVENTIONALS														
pH	std units	EPA 150.1	6.5-8.5	**		6.49		6.50		6.76	--	6.77	--	
Alkalinity	mg/L CaCO3	SM 2320				274		274		306	--	127	--	
Carbonate	mg/L CaCO3	SM 2320				1.0	U	1.0	U	1.0	U	--	--	
Bicarbonate	mg/L CaCO3	SM 2320				274		274		306	--	--	--	
Total Dissolved Solids	mg/L	EPA 160.1	500	**		336		318		333	--	210	--	
Hydroxide	mg/L CaCO3	SM 2320				1.0	U	1.0	U	1.0	U	--	--	
Chloride	mg/L	EPA 325.2	250	**		19.4		19.0		32.8	--	15.6	--	
N-Ammonia	mg-N/L	EPA 350.1M				6.35		6.18		21.2	--	0.038	--	
N-Nitrate	mg-N/L	Calculated	10			0.050	U	0.050	U	0.196	--	1.41	--	
N-Nitrite	mg-N/L	EPA 353.2	1			0.050	U	0.050	U	0.019	--	0.223	--	
Nitrate + Nitrite	mg-N/L	EPA 353.2				0.050	U	0.050	U	0.215	--	1.63	--	
Sulfate	mg/L	EPA 375.2	250	**		5.5		5.5		5.6	--	17.9	--	
Total Organic Carbon	mg/L	EPA 415.1				6.51		6.47		8.77	--	1.50	U	
TOTAL METALS														
Arsenic	mg/L	SW6010B-Total	0.01		0.005	0.000058	0.0048	0.05	U	0.05	U	--	--	
Barium	mg/L	SW6010B-Total	2				3.2	0.062		0.064		0.068	--	
Cadmium	mg/L	SW6010B-Total	0.005		0.005		0.008	0.002	U	0.002	U	0.002	U	
Calcium	mg/L	SW6010B-Total					43.3	45.5		37.2	--	51.5	--	
Chromium	mg/L	SW6010B-Total	0.1	***	0.05		0.048	0.005	U	0.005	U	0.005	U	
Iron	mg/L	SW6010B-Total	0.3	**			33.6	35.1		11.5	--	96.8	--	
Lead	mg/L	SW6010B-Total	0.015		0.015		0.02	0.02	U	0.02	U	0.02	U	
Manganese	mg/L	SW6010B-Total	0.05	**			2.2	2.26		2.36	--	2.24	--	
Mercury	mg/L	SW7470A-Total	0.002		0.002	0.0048	0.0001	0.0001	U	0.0001	U	0.0001	U	
Potassium	mg/L	SW6010B-Total					10.3	10.7		29.0	--	10.3	--	
Selenium	mg/L	SW6010B-Total	0.05				0.08	0.05	U	0.05	U	0.05	U	
Silver	mg/L	SW6010B-Total					0.08	0.003	U	0.003	U	0.003	U	
Sodium	mg/L	SW6010B-Total					20.5	21.2		32.5	--	21.1	--	
DISSOLVED METALS														
Arsenic	mg/L	SW6010B-Diss	0.01		0.005	0.000058	0.0048	0.05	U	0.05	U	--	--	
Barium	mg/L	SW6010B-Diss	2				3.2	0.069		0.071		0.072	--	
Cadmium	mg/L	SW6010B-Diss	0.005		0.005		0.008	0.002	U	0.002	U	0.002	U	
Calcium	mg/L	SW6010B-Diss					48.1	48.5		39.1	--	29.4	--	
Chromium	mg/L	SW6010B-Diss	0.1	***	0.05		0.048	0.005	U	0.005	U	0.005	U	
Iron	mg/L	SW6010B-Diss	0.3	**			37.5	37.7		12.2	--	0.27	--	
Lead	mg/L	SW6010B-Diss	0.015		0.015		0.02	0.02	U	0.02	U	0.02	U	
Manganese	mg/L	SW6010B-Diss	0.05	**			2.2	2.52		2.53	--	2.34	--	
Mercury	mg/L	SW7470A-Diss	0.002		0.002	0.0048	0.0001	0.0001	U	0.0001	U	0.0001	U	
Potassium	mg/L	SW6010B-Diss					11.4	11.3		29.9	--	4.4	--	
Selenium	mg/L	SW6010B-Diss	0.05				0.08	0.05	U	0.05	U	0.05	U	
Silver	mg/L	SW6010B-Diss					0.08	0.003	U	0.003	U	0.003	U	
Sodium	mg/L	SW6010B-Diss					22.9	22.9		33.8	--	15.7	--	
VOLATILE ORGANICS														
Chloromethane	µg/L	SW8260				3.37		1.0	U	1.0	U	1.0	U	
Bromomethane	µg/L	SW8260				11.2		1.0	U	1.0	U	1.0	U	
Vinyl Chloride	µg/L	SW8260	2		0.2	0.0292	24	1.0	U	1.0	U	1.0	U	
Chloroethane	µg/L	SW8260						1.0	U	1.0	U	1.0	U	
Methylene Chloride	µg/L	SW8260			5			2.0	U	2.0	U	2.0	U	
Acetone	µg/L	SW8260				800		5.0	U	5.0	U	5.0	U	
Carbon Disulfide	µg/L	SW8260				800		1.0	U	1.0	U	1.0	U	
1,1-Dichloroethene	µg/L	SW8260	7			400		1.0	U	1.0	U	1.0	U	
1,1-Dichloroethane	µg/L	SW8260				800		1.0	U	1.0	U	1.0	U	
trans-1,2-Dichloroethene	µg/L	SW8260				160		1.0	U	1.0	U	1.0	U	
cis-1,2-Dichloroethene	µg/L	SW8260				80		1.0	U	1.0	U	1.0	U	
Chloroform	µg/L	SW8260	100	*TH		7.17	80	1.0	U	1.0	U	1.0	U	

TABLE A-2
2008 Groundwater and Surface Water Data

PARAMETERS	Units	Analytical Method	Groundwater Regulatory Standards				MW-7	MW-7D	MW-8	MW-8D****	MW-9A	TRIP BLANK	TRIP BLANK	TRIP BLANK	
			MCL	MTCA A	MTCA B carcin.	non-carc.	02/06/08	02/06/08	02/06/08	8/13/2008	03/25/08	02/05/08	03/25/08	08/13/08	
1,2-Dichloroethane	µg/L	SW8260	5	5	0.481	160	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
2-Butanone	µg/L	SW8260					5.0 U	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U	--	
1,1,1-Trichloroethane	µg/L	SW8260	200	200		7200	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Carbon Tetrachloride	µg/L	SW8260	5		0.337	5.6	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Vinyl Acetate	µg/L	SW8260				8000	5.0 U	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U	--	
Bromodichloromethane	µg/L	SW8260	100	*TH	0.706	160	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
1,2-Dichloropropane	µg/L	SW8260			0.643		1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
cis-1,3-Dichloropropene	µg/L	SW8260			0.24	240	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Trichloroethene	µg/L	SW8260	5	5	0.11	2.4	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Dibromochloromethane	µg/L	SW8260			0.521	160	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
1,1,2-Trichloroethane	µg/L	SW8260	5		0.768	32	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Benzene	µg/L	SW8260	5	5	0.795	32	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
trans-1,3-Dichloropropene	µg/L	SW8260			0.24	240	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
2-Chloroethylvinylether	µg/L	SW8260					--	--	--	--	5.0 U	--	5.0 U	--	
Bromoform	µg/L	SW8260	100	*TH	5.54	160	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
4-Methyl-2-Pentanone (MIBK)	µg/L	SW8260					5.0 U	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U	--	
2-Hexanone	µg/L	SW8260					5.0 U	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U	--	
Tetrachloroethene	µg/L	SW8260	5	5	0.081	80	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
1,1,2,2-Tetrachloroethane	µg/L	SW8260			0.219		1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Toluene	µg/L	SW8260	1000	1000		640	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Chlorobenzene	µg/L	SW8260				160	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Ethylbenzene	µg/L	SW8260	700	700		800	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Styrene	µg/L	SW8260	100		1.46	1600	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Trichlorofluoromethane	µg/L	SW8260				2400	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
m,p-Xylene	µg/L	SW8260	10000	*XY	1000	*XY	1600	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--
o-Xylene	µg/L	SW8260	10000	*XY	1000	*XY	1600	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--
1,2-Dichlorobenzene	µg/L	SW8260				720	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
1,4-Dichlorobenzene	µg/L	SW8260			1.8		1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Methyl Iodide	µg/L	SW8260					1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Acrylonitrile	µg/L	SW8260			0.081	8	5.0 U	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U	--	
Dibromomethane	µg/L	SW8260					1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
1,1,1,2-Tetrachloroethane	µg/L	SW8260			1.7	240	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
1,2-Dibromo-3-chloropropane	µg/L	SW8260			0.031		5.0 U	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U	--	
1,2,3-Trichloropropane	µg/L	SW8260			0.0063	48	2.0 U	2.0 U	2.0 U	--	2.0 U	2.0 U	2.0 U	--	
trans-1,4-Dichloro-2-butene	µg/L	SW8260					5.0 U	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U	--	
Ethylene Dibromide	µg/L	SW8260	0.05	0.01	0.000515		1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	--	
Bromochloromethane	µg/L	SW8260					1.0 U	1.0 U	1.0 U	--	--	1.0 U	--	--	
Vinyl Chloride	µg/L	SW8260 SIM	2	0.2	0.0292	24	0.060	0.063	0.034	--	--	--	--	--	
Vinyl Chloride*	µg/L	SW8260 SIM	2	0.2	0.0292	24	0.020	--	0.027	0.028	0.020	--	--	0.020 U	
POLYCHLORINATED BIPHENYLS															
Aroclor 1016	µg/L	SW8082	0.5	0.1	0.044		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
Aroclor 1242	µg/L	SW8082	0.5	0.1	0.044		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
Aroclor 1248	µg/L	SW8082	0.5	0.1	0.044		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
Aroclor 1254	µg/L	SW8082	0.5	0.1	0.044		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
Aroclor 1260	µg/L	SW8082	0.5	0.1	0.044		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
Aroclor 1221	µg/L	SW8082	0.5	0.1	0.044		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
Aroclor 1232	µg/L	SW8082	0.5	0.1	0.044		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
SEMIVOLATILE ORGANICS															
Phenol	µg/L	SW8270D				4800	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
Bis-(2-Chloroethyl) Ether	µg/L	SW8270D			0.04		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
2-Chlorophenol	µg/L	SW8270D				40	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
1,3-Dichlorobenzene	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
1,4-Dichlorobenzene	µg/L	SW8270D	75		1.8		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
Benzyl Alcohol	µg/L	SW8270D				2400	5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--	
1,2-Dichlorobenzene	µg/L	SW8270D	600			720	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
2-Methylphenol	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
2,2'-Oxybis(1-Chloropropane)	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
4-Methylphenol	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
N-Nitroso-Di-N-Propylamine	µg/L	SW8270D					5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--	
Hexachloroethane	µg/L	SW8270D			3.1	8	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
Nitrobenzene	µg/L	SW8270D				4	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
Isophorone	µg/L	SW8270D			46	1600	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
2-Nitrophenol	µg/L	SW8270D					5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--	
2,4-Dimethylphenol	µg/L	SW8270D				160	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
Benzoic Acid	µg/L	SW8270D				64000	10 U	10 U	10 U	--	10 U	--	--	--	
bis(2-Chloroethoxy) Methane	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
2,4-Dichlorophenol	µg/L	SW8270D				24	5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--	
1,2,4-Trichlorobenzene	µg/L	SW8270D				80	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	
Naphthalene	µg/L	SW8270D		160		160	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--	

PARAMETERS	Units	Analytical Method	Groundwater Regulatory Standards				MW-7	MW-7D	MW-8	MW-8D****	MW-9A	TRIP BLANK	TRIP BLANK	TRIP BLANK
			MCL	MTCA A	MTCA B carcin.	non-carc.	02/06/08	02/06/08	02/06/08	8/13/2008	03/25/08	02/05/08	03/25/08	08/13/08
4-Chloroaniline	µg/L	SW8270D				32	5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
Hexachlorobutadiene	µg/L	SW8270D			0.56	1.6	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
4-Chloro-3-methylphenol	µg/L	SW8270D					5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
2-Methylnaphthalene	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Hexachlorocyclopentadiene	µg/L	SW8270D	50			48	5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
2,4,6-Trichlorophenol	µg/L	SW8270D			4		5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
2,4,5-Trichlorophenol	µg/L	SW8270D				800	5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
2-Chloronaphthalene	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
2-Nitroaniline	µg/L	SW8270D					5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
Dimethylphthalate	µg/L	SW8270D				16000	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Acenaphthylene	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
3-Nitroaniline	µg/L	SW8270D					5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
Acenaphthene	µg/L	SW8270D				960	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
2,4-Dinitrophenol	µg/L	SW8270D				32	10 U	10 U	10 U	--	10 U	--	--	--
4-Nitrophenol	µg/L	SW8270D					5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
Dibenzofuran	µg/L	SW8270D				32	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
2,6-Dinitrotoluene	µg/L	SW8270D				16	5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
2,4-Dinitrotoluene	µg/L	SW8270D				32	5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
Diethylphthalate	µg/L	SW8270D				13000	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
4-Chlorophenyl-phenylether	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Fluorene	µg/L	SW8270D				640	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
4-Nitroaniline	µg/L	SW8270D					5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
4,6-Dinitro-2-Methylphenol	µg/L	SW8270D					10 U	10 U	10 U	--	10 U	--	--	--
N-Nitrosodiphenylamine	µg/L	SW8270D			29000		1.6	1.5	1.0 U	--	1.0 U	--	--	--
4-Bromophenyl-phenylether	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Hexachlorobenzene	µg/L	SW8270D	1		0.055	13	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Pentachlorophenol	µg/L	SW8270D	1		0.73	480	5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
Phenanthrene	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Carbazole	µg/L	SW8270D			4.4		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Anthracene	µg/L	SW8270D				4800	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Di-n-Butylphthalate	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Fluoranthene	µg/L	SW8270D				640	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Pyrene	µg/L	SW8270D				480	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Butylbenzylphthalate	µg/L	SW8270D				3200	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
3,3'-Dichlorobenzidine	µg/L	SW8270D			0.19		5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--
Benzo(a)anthracene	µg/L	SW8270D			0.012		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
bis(2-Ethylhexyl)phthalate	µg/L	SW8270D	6		6.3	320	1.0 U	1.0 U	1.0 U	--	1.5	--	--	--
Chrysene	µg/L	SW8270D			0.012		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Di-n-Octyl phthalate	µg/L	SW8270D				320	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Benzo(b)fluoranthene	µg/L	SW8270D			0.012		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Benzo(k)fluoranthene	µg/L	SW8270D			0.012		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Benzo(a)pyrene	µg/L	SW8270D	0.2	0.1	0.012		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Indeno(1,2,3-cd)pyrene	µg/L	SW8270D			0.012		1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Dibenz(a,h)anthracene	µg/L	SW8270D				32	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
Benzo(g,h,i)perylene	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--
1-Methylnaphthalene	µg/L	SW8270D					1.0 U	1.0 U	1.0 U	--	1.0 U	--	--	--

NOTES: J = Approximate Value
 ** = Secondary MCL
 *** = Chromium Standards based on Chromium VI
 *TH = Primary MCL for the sum of all trihalomethanes
 *XY = Primary MCL for the sum of all xylenes
Bold = For volatiles and semivolatiles only, marks a detection
 = Exceeds one or more MTCA and/or MCL standards
 * = Second set of vinyl chloride data sampled 8/13/08.
 **** = Lab data and COC identify MW-8 field duplicate as MW-8A.

**TABLE A-3
PREVIOUS GROUNDWATER INVESTIGATION DATA (2008-2012)
YAKIMA MILL SITE AND CLOSED CITY OF YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

Table A-3 - Previous Groundwater Investigation Data (2008-2012)

Location: Date Collected:	MW-7 2/6/2008	MW-7 2/26/2009	MW-7 11/4/2009	MW-7 2/4/2010	Dup of MW-7 2/4/2010	MW-7 5/10/2012	MW-8 2/6/2008	MW-8 2/26/2009	MW-8 11/4/2009	MW-8 2/4/2010	Dup of MW-8 2/4/2010	MW-8 5/10/2012
DISSOLVED METALS (µg/L) EPA Methods 200.8/6010B												
Arsenic	50 U	3.83	3.06	0.39	1.20	0.15 U	50 U	1 U	0.98 E	0.93	0.97	0.54
Barium	69	67.2	NA	NA	NA	NA	72	78.7	NA	NA	NA	NA
Cadmium	2 U	1 U	NA	NA	NA	NA	2 U	1 U	NA	NA	NA	NA
Calcium	48,100	39,900	49,100	52,400	57,500	NA	39,100	35,400	51,400	118,000	109,000	NA
Cobalt	NA	1 U	NA	NA	NA	NA	NA	4.4	NA	NA	NA	NA
Copper	NA	1 U	NA	NA	NA	NA	NA	1 U	NA	NA	NA	NA
Chromium	5 U	1 U	NA	NA	NA	NA	5 U	1 U	NA	NA	NA	NA
Iron	37,500	23,700	18,500	22	851	23	12,200	3,330	45	20 U	20 U	20 U
Lead	20 U	1 U	NA	NA	NA	NA	20 U	1 U	NA	NA	NA	NA
Magnesium	NA	15,000	18,200	17,900	18,100	NA	NA	15,600	27,600	54,500	54,200	NA
Manganese	2,520	1,950	2,330	1,590	1,750	346	2,340	2,380	2,690	6,290	6,210	1,880
Nickel	NA	2.4	NA	NA	NA	NA	NA	9.24	NA	NA	NA	NA
Potassium	11,400	11,200	NA	NA	NA	NA	29,900	23,400	NA	NA	NA	NA
Selenium	50 U	1 U	NA	NA	NA	NA	50 U	1.54	NA	NA	NA	NA
Sodium	22,900	19,300	22,900	28,600	28,900	7,490	33,800	27,000	48,300	52,600	51,800	34,100
Thallium	NA	1 U	NA	NA	NA	NA	NA	1 U	NA	NA	NA	NA
Zinc	NA	1.66	NA	NA	NA	NA	NA	2.91	NA	NA	NA	NA
VOLATILES (µg/L) Method EPA 8260C												
Vinyl Chloride	0.06	0.03 U	0.2 U	0.03 UJ	0.03 UJ	0.06 UE	0.034	0.03 U	0.2 U	0.03 UJ	0.03 UJ	0.06 UE
CONVENTIONALS												
pH (SU; EPA Method 150.1/field reading)	6.49	6.28	6.45	6.47	6.36	5.77	6.76	6.54	6.34	6.28	6.23	5.62
Alkalinity (mg CaCO3/L; EPA Method SM2320/310.1)	274	264	241	263	264	NA	306	284	174	187	188	NA
Carbonate (mg CaCO3/L; EPA Method SM2320/310.1)	1 U	1 U	NA	NA	NA	NA	1 U	1 U	NA	NA	NA	NA
Bicarbonate (mg CaCO3/L; EPA Method SM2320/310.1)	274	121	NA	NA	NA	NA	306	173	NA	NA	NA	NA
Bromide (mg/L; EPA Method 300.0)	NA	0.02 U	NA	NA	NA	NA	NA	0.33	NA	NA	NA	NA
Chloride (mg/L; EPA Method 325.2/300.0)	19.4	20.7	21.9	24.1	23.6	NA	32.8	32.8	108	111	112	NA
Fluoride (mg/L; EPA Method 300.0)	NA	0.75	NA	NA	NA	NA	NA	0.39	NA	NA	NA	NA
Nitrate (mg/L; EPA Method 300.0)	0.050 U	1.61	0.199	10.3	11.2	0.621	0.20	14.4	17.9	95.3	94.7	86.2
Nitrite (mg/L; EPA Method 353.2/300.0)	0.050 U	0.015	NA	NA	NA	NA	0.019	0.026	NA	NA	NA	NA
Soluble Reactive Phosphate (mg/L; EPA Method 300.0)	NA	0.004	NA	NA	NA	NA	NA	0.001	NA	NA	NA	NA
Sulfate (mg/L; EPA Method 375.2/300.0)	5.5	1 U	9.12	1.40	1.0 U	NA	5.6	3.02	58.0	53.3	55.0	NA

**TABLE A-3
PREVIOUS GROUNDWATER INVESTIGATION DATA (2008-2012)
YAKIMA MILL SITE AND CLOSED CITY OF YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

Table A-3 - Previous Groundwater Investigation Data (2008-2012)

Location: Date Collected:	MW-9A 3/25/2008	MW-9A 2/26/2009	MW-9A 11/4/2009	MW-9A 2/4/2010	MW-9A 5/10/2012	MW-11 2/26/2009	MW-11 11/4/2009	MW-11 2/4/2010	MW-11 5/10/2012
DISSOLVED METALS (µg/L) EPA Methods 200.8/6010B									
Arsenic	50 U	1 U	0.93 E	1.00	0.64	4.33	4.80	3.01	5.02
Barium	13	11.3	NA	NA	NA	51.4	NA	NA	NA
Cadmium	2 U	1 U	NA	NA	NA	1 U	NA	NA	NA
Calcium	29,400	26,600	23,800	26,800	NA	30,000	44,800	31,600	NA
Cobalt	NA	1 U	NA	NA	NA	1 U	NA	NA	NA
Copper	NA	1.14	NA	NA	NA	1 U	NA	NA	NA
Chromium	5 U	1 U	NA	NA	NA	1 U	NA	NA	NA
Iron	270	10 U	20 U	20 U	20 U	24,100	35,400	7,200	35,100
Lead	20 U	1 U	NA	NA	NA	1 U	NA	NA	NA
Magnesium	NA	8,570	8,020	8,920	NA	10,700	14,500	11,000	NA
Manganese	872	10 U	13.3	1 U	11.4	1,410	1,890	1,610	1,220
Nickel	NA	1.47	NA	NA	NA	1.62	NA	NA	NA
Potassium	4,400	3,680	NA	NA	NA	5,810	NA	NA	NA
Selenium	50 U	1 U	NA	NA	NA	1 U	NA	NA	NA
Sodium	15,700	10,900	11,100	14,400	11,500	15,300	17,300	20,100	18,000
Thallium	NA	1 U	NA	NA	NA	1 U	NA	NA	NA
Zinc	NA	1.25	NA	NA	NA	6.43	NA	NA	NA
VOLATILES (µg/L) Method EPA 8260C									
Vinyl Chloride	1 U	0.03 U	0.2 U	0.03 UJ	0.06 UE	0.03 U	0.2 U	0.03 UJ	0.06 UE
CONVENTIONALS									
pH (SU; EPA Method 150.1/field reading)	6.77	6.69	6.72	6.65	6.02	6.28	6.47	6.50	5.97
Alkalinity (mg CaCO3/L; EPA Method SM2320/310.1)	127	118	97.5	118	NA	216	202	196	NA
Carbonate (mg CaCO3/L; EPA Method SM2320/310.1)	NA	1 U	NA	NA	NA	1 U	NA	NA	NA
Bicarbonate (mg CaCO3/L; EPA Method SM2320/310.1)	NA	80.6	NA	NA	NA	99.1	NA	NA	NA
Bromide (mg/L; EPA Method 300.0)	NA	0.05	NA	NA	NA	0.11	NA	NA	NA
Chloride (mg/L; EPA Method 325.2/300.0)	15.6	15.2	10.9	13.1	NA	11.9	13.5	11.9	NA
Fluoride (mg/L; EPA Method 300.0)	NA	0.32	NA	NA	NA	0.31	NA	NA	NA
Nitrate (mg/L; EPA Method 300.0)	1.41	2.18	3.13	2.80	4.56	0.033	0.027	0.028	0.051
Nitrite (mg/L; EPA Method 353.2/300.0)	0.22	0.014	NA	NA	NA	0.011	NA	NA	NA
Soluble Reactive Phosphate (mg/L; EPA Method 300.0)	NA	0.12	NA	NA	NA	0.022	NA	NA	NA
Sulfate (mg/L; EPA Method 375.2/300.0)	17.9	7.9	10.7	12.7	NA	1 U	1.0 U	1.0 U	NA

**TABLE A-3
PREVIOUS GROUNDWATER INVESTIGATION DATA (2008-2012)
YAKIMA MILL SITE AND CLOSED CITY OF YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

Table A-3 - Previous Groundwater Investigation Data (2008-2012)

Location: Date Collected:	MW-12 2/26/2009	MW-12 11/4/2009	MW-12 2/4/2010	MW-12 5/10/2012	MW-13 2/26/2009	MW-13 11/4/2009	MW-13 2/4/2010	MW-13 5/10/2012	MW-14 11/5/2009	MW-14 2/4/2010	MW-14 5/10/2012
DISSOLVED METALS (µg/L) EPA Methods 200.8/6010B											
Arsenic	1 U	2.01	0.87	0.67	1 U	0.36 E	0.26	0.39	0.61 E	0.32	0.15
Barium	16.8	NA	NA	NA	24.5	NA	NA	NA	NA	NA	NA
Cadmium	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA
Calcium	9,140	14,200	17,400	NA	31,700	19,100	18,000	NA	17,300	19,900	NA
Cobalt	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA
Copper	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA
Chromium	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA
Iron	7,600	5,840	3,000	15,400	3,650	1,550	495	8,230	63	20 U	183
Lead	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA
Magnesium	3,530	4,320	5,670	NA	3,550	1,830	1,640	NA	8,290	7,330	NA
Manganese	503	745	767	2,780	649	287	192	3,190	331	2.88	30.8
Nickel	1 U	NA	NA	NA	1.37	NA	NA	NA	NA	NA	NA
Potassium	1,950	NA	NA	NA	2,940	NA	NA	NA	NA	NA	NA
Selenium	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA
Sodium	10,300	13,300	16,700	33,600	10,700	7,760	9,370	40,100	27,800	15,900	3,490
Thallium	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA
Zinc	1.39	NA	NA	NA	1.13	NA	NA	NA	NA	NA	NA
VOLATILES (µg/L) Method EPA 8260C											
Vinyl Chloride	0.03 U	0.2 U	0.03 UJ	0.06 UE	0.03 U	0.2 U	0.03 UJ	0.06 UE	0.2 U	0.03 UJ	0.06 UE
CONVENTIONALS											
pH (SU; EPA Method 150.1/field reading)	6.01	6.53	6.34	6.09	6.49	6.85	7.22	5.87	6.90	7.19	6.27
Alkalinity (mg CaCO3/L; EPA Method SM2320/310.1)	67.5	84.0	98.4	NA	136	72.4	57.4	NA	117	62.2	NA
Carbonate (mg CaCO3/L; EPA Method SM2320/310.1)	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA
Bicarbonate (mg CaCO3/L; EPA Method SM2320/310.1)	21.2	NA	NA	NA	79.0	NA	NA	NA	NA	NA	NA
Bromide (mg/L; EPA Method 300.0)	0.02 U	NA	NA	NA	0.02 U	NA	NA	NA	NA	NA	NA
Chloride (mg/L; EPA Method 325.2/300.0)	7.62	6.96	10.6	NA	6.06	6.26	6.33	NA	35.4	29.8	NA
Fluoride (mg/L; EPA Method 300.0)	0.80	NA	NA	NA	0.71	NA	NA	NA	NA	NA	NA
Nitrate (mg/L; EPA Method 300.0)	0.014	0.016	0.024	0.039	0.018	0.026	0.201	0.01 U	0.265	2.71	0.147
Nitrite (mg/L; EPA Method 353.2/300.0)	0.002 U	NA	NA	NA	0.003	NA	NA	NA	NA	NA	NA
Soluble Reactive Phosphate (mg/L; EPA Method 300.0)	0.077	NA	NA	NA	0.21	NA	NA	NA	NA	NA	NA
Sulfate (mg/L; EPA Method 375.2/300.0)	6.17	1.0 U	3.68	NA	4.63	1.89	12.5	NA	12.1	14.6	NA

**TABLE A-3
PREVIOUS GROUNDWATER INVESTIGATION DATA (2008-2012)
YAKIMA MILL SITE AND CLOSED CITY OF YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

Table A-3 - Previous Groundwater Investigation Data (2008-2012)

Location: Date Collected:	MW-15 11/5/2009	MW-15 2/4/2010	MW-15 5/10/2012	MW-16 11/5/2009	MW-16 2/4/2010	MW-16 5/10/2012	MW-17 11/5/2009	MW-17 2/4/2010	MW-17 5/10/2012	MW-18 11/5/2009	MW-18 2/4/2010	MW-18 5/10/2012
DISSOLVED METALS (µg/L) EPA Methods 200.8/6010B												
Arsenic	1.39	0.71	0.75	0.77 E	0.72	0.50	2.15	0.85	0.84	6.75	2.08	8.31
Barium	NA	NA	NA									
Cadmium	NA	NA	NA									
Calcium	18,100	23,500	NA	49,400	37,800	NA	35,400	47,800	NA	49,700	69,400	NA
Cobalt	NA	NA	NA									
Copper	NA	NA	NA									
Chromium	NA	NA	NA									
Iron	7,970	876	4,890	20 U	20 U	26	16,800	1,750	487	26,100	4,910	18,600
Lead	NA	NA	NA									
Magnesium	8,320	8,680	NA	18,600	12,200	NA	13,800	16,500	NA	24,400	25,200	NA
Manganese	993	1,080	773	587	917	915	2,150	2,580	1,500	4,450	5,360	3,460
Nickel	NA	NA	NA									
Potassium	NA	NA	NA									
Selenium	NA	NA	NA									
Sodium	9,600	11,300	7,860	36,800	23,800	42,500	23,400	27,800	26,200	38,400	21,700	11,400
Thallium	NA	NA	NA									
Zinc	NA	NA	NA									
VOLATILES (µg/L) Method EPA 8260C												
Vinyl Chloride	0.2 U	0.03 UJ	0.06 UE	0.2 U	0.03 UJ	0.06 UE	0.2 U	0.03 UJ	0.06 UE	0.2 U	0.03 UJ	0.06 UE
CONVENTIONALS												
pH (SU; EPA Method 150.1/field reading)	6.61	6.66	5.92	6.76	6.60	6.15	6.50	6.67	6.21	6.36	6.57	6.16
Alkalinity (mg CaCO ₃ /L; EPA Method SM2320/310.1)	123	128	NA	190	192	NA	236	284	NA	345	356	NA
Carbonate (mg CaCO ₃ /L; EPA Method SM2320/310.1)	NA	NA	NA									
Bicarbonate (mg CaCO ₃ /L; EPA Method SM2320/310.1)	NA	NA	NA									
Bromide (mg/L; EPA Method 300.0)	NA	NA	NA									
Chloride (mg/L; EPA Method 325.2/300.0)	8.27	10.9	NA	28.5	26.7	NA	18.0	22.3	NA	37.0	19.7	NA
Fluoride (mg/L; EPA Method 300.0)	NA	NA	NA									
Nitrate (mg/L; EPA Method 300.0)	0.013	0.015	0.01 U	0.306	0.018	3.93	0.027	0.806	0.533	0.035	0.134	0.086
Nitrite (mg/L; EPA Method 353.2/300.0)	NA	NA	NA									
Soluble Reactive Phosphate (mg/L; EPA Method 300.0)	NA	NA	NA									
Sulfate (mg/L; EPA Method 375.2/300.0)	1.0 U	1.0 U	NA	110	10.6	NA	1.0 U	3.12	NA	1.69	1.0 U	NA

E = Value was reported by the laboratory as an estimated because it is below the normal reporting limit.
 U = Indicates the compound was not detected at the reported concentration.
 J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
 NA = Not Analyzed/Not Applicable.

TABLE A-4
HISTORICAL LANDFILL GAS MEASUREMENTS
YAKIMA MILL SITE AND CLOSED CITY OF YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON

Soil Vapor Probe ID	Date Collected	% Methane	% CO ₂	% Oxygen
GP-3	2/24/2009	19.5	14.8	0.0
	4/17/2009	17.8	12.0	0.3
	11/5/2009	13.7	15.8	0.0
	2/3/2010	13.2	12.2	0.0
	5/10/2012	8.1	12.2	0.0
GP-4	2/25/2009	22.4	9.2	0.0
	4/17/2009	21.6	11.9	0.0
	11/5/2009	37.2	17.1	0.0
	2/3/2010	37.8	10.2	0.5
	5/10/2012	24.7	15.7	1.7
GP-5	2/25/2009	17.6	13.7	0.0
	4/17/2009	16.2	12.7	0.0
	11/5/2009	27.2	17.2	0.8
	2/3/2010	19.9	13.5	0.0
	5/10/2012	15.2	10.9	2.9
GP-6	2/25/2009	0.1	12.7	6.1
	4/17/2009	0.2	11.3	8.5
	11/5/2009	0.0	18.4	3.9
	2/3/2010	0.0	13.4	5.6
	5/10/2012	0.0	11.3	9.3
GP-7	2/25/2009	0.0	1.8	19.2
	4/17/2009	0.1	2.7	19.4
	11/5/2009	0.0	1.8	19.2
	2/3/2010	0.0	2.5	18.9
	5/10/2012	0.0	0.2	20.1
GP-8	2/25/2009	0.0	3.8	15.3
	4/17/2009	0.1	4.8	14.2
	11/5/2009	0.0	2.9	17.9
	2/3/2010	0.0	2.7	17.8
	5/10/2012	0.0	4.6	16.2
GP-9	2/25/2009	0.1	2.0	17.5
	4/17/2009	0.1	3.3	17.8
	11/5/2009	0.0	3.1	18.3
	2/3/2010	0.0	4.5	15.9
	5/10/2012	0.0	3.2	16.9
GP-10	2/25/2009	22.6	16.8	0.0
	4/17/2009	32.4	21.4	0.0
	11/5/2009	41.3	31.4	1.5
	2/3/2010	50.0	24.1	0.0
	5/10/2012	34.0	22.7	1.5
GP-11	2/25/2009	58.5	33.9	0.0
	4/17/2009	51.7	35.6	0.0
	11/5/2009	57.4	39.0	0.0
	2/3/2010	62.4	36.2	0.0
	5/10/2012	40.3	34.9	0.0

TABLE A-4
HISTORICAL LANDFILL GAS MEASUREMENTS
YAKIMA MILL SITE AND CLOSED CITY OF YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON

Soil Vapor Probe ID	Date Collected	% Methane	% CO ₂	% Oxygen
GP-12	2/25/2009	15.4	18.8	0.0
	4/17/2009	21.3	21.1	0.0
	11/5/2009	24.2	24.8	3.2
	2/3/2010	28.1	23.3	0.0
	5/10/2012	13.9	17.1	4.9
GP-13	2/25/2009	51.6	40.1	0.0
	4/17/2009	53.7	43.1	0.0
	11/5/2009	41.9	40.8	0.0
	2/3/2010	45.4	39.9	0.0
	5/10/2012	14.3	23.4	4.6
GP-14	4/17/2009	0.0	3.9	15.0
	11/5/2009	0.0	4.2	16.3
	2/3/2010	0.0	3.3	16.5
	5/10/2012	0.0	2.0	18.2
GP-15	4/17/2009	0.0	2.0	18.5
	11/5/2009	0.0	0.7	20.2
	2/3/2010	0.0	1.1	19.4
	5/10/2012	0.0	0.1	20.0
GP-16	4/17/2009	0.0	1.7	19.0
	11/5/2009	0.0	1.3	19.7
	2/3/2010	0.0	1.8	18.8
	5/10/2012	0.0	0.5	19.4
GP-17	4/17/2009	0.2	1.5	19.6
	11/5/2009	0.0	1.9	17.3
	2/3/2010	0.0	1.3	19.1
	5/10/2012	0.0	2.2	17.7
GP-18	4/17/2009	0.1	0.5	21.0
	11/5/2009	0.0	0.7	20.4
	2/3/2010	0.0	0.7	20.0
	5/10/2012	0.0	0.9	19.1
GP-19	11/5/2009	61.3	39.8	0.0
	2/3/2010	69.5	35.5	0.0
	5/10/2012	62.6	34.9	0.4
GP-20	11/5/2009	65.9	35.8	0.0
	2/3/2010	77.7	26.0	0.0
	5/10/2012	53.1	30.2	2.6
GP-21	11/5/2009	69.3	25.7	0.0
	2/3/2010	75.7	24.8	0.0
	5/10/2012	Not measured. Probe had been destroyed.		
GP-22	11/5/2009	43.1	43.2	0.0
	2/3/2010	Not measured. Probe had been destroyed.		

The Lower Explosive Limit (LEL) and Upper Explosive Limit (UEL) for methane are 5 percent by volume and 15 percent by volume, respectively.

TABLE A-5
HISTORICAL SURFACE WATER ANALYTICAL RESULTS
CLOSED CITY OF YAKIMA MILL SITE
YAKIMA, WASHINGTON

Sampling Point ID (a)	Sample Collection Date	pH	Arsenic	Iron	Manganese	Nitrate	Sodium
		EPA 9040C (standard units)	EPA 200.8 µg/L	EPA 200.8 µg/L	EPA 200.8 µg/L	EPA 300.0 µg/L	EPA 300.0 µg/L
River-1109	11/5/2009	6.80	0.52 E	20 U	6.96	171	5,020
RGI-0210	2/4/2010	8.04	0.45	20 U	2.72	321	6,540

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Former Plywood Plant Parcels Initial Investigation													
		FPP-B01 (0.5-1.5)	FPP-B01 (12-13)	FPP-B02 (1-2)	FPP-B02 (14-15.5)	FPP-B03 (0.5-2)	FPP-B03 (13-14)	FPP-B04 (11-12)	FPP-B04 (21-22)	FPP-B05 (15-16.5)	FPP-B05 (22.5-24)	FPP-B06 (15-16)	FPP-B07 (0.5-1)	FPP-B07 (15-16)	FPP-B08 (5-6.5)
		EV13060128-15 06/18/2013	EV13060128-16 06/18/2013	EV13060128-19 06/19/2013	EV13060128-20 06/19/2013	EV13060128-17 06/18/2013	EV13060128-18 06/18/2013	EV13060128-13 06/18/2013	EV13060128-14 06/18/2013	EV13060128-25 06/19/2013	EV13060128-26 06/19/2013	EV13060128-11 06/18/2013	EV13060128-23 06/19/2013	EV13060128-24 06/19/2013	EV13060128-12 06/18/2013
TOTAL METALS (mg/kg) EPA Methods 6020/7471/7196															
Arsenic	20	2.5	2.0	2.2	2.0	2.5	2.3	2.2	4.7	2.3	1.4	2.5	2.1	2.6	3.2
Cadmium	2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chromium	2000	15	10	13	8.8	18	14	28	17	14	16	39	15	26	17
Chromium (VI)	19	NA	NA	NA	5.0 U	NA	NA	NA	NA	5.0 U	NA	NA	NA	NA	NA
Iron		23,000	20,000	21,000	21,000	24,000	23,000	26,000	20,000	22,000	22,000	22,000	37,000	25,000	23,000
Lead	250	14	2.7	15	3.2	8.5	2.8	3.5	14	4.8	2.4	4.0	4.2	3.7	15
Manganese		360	370	350	360	350	350	300	250	300	250	280	470	270	360
Mercury	2	0.040	0.033	0.040	0.031	0.036	0.024	0.028	0.035	0.028	0.020 U	0.037	0.020 U	0.034	0.052
TOTAL PETROLEUM HYDROCARBONS (mg/kg) NWTPH-DX															
TPH-Diesel Range	2000	25 U	25 U	25 U	25 U	25 U	25 U	250 U	25 U	100 U	25 U	50 U	120 U	25 U	220 J
TPH-Oil Range	2000	130	50 U	190	50 U	50 U	50 U	9400	710	4500	500	2100	1500	120	520
NWTPH-GX															
TPH-Gasoline Range	100 (a)	3.0 U	3.0 U	6.2	3.0 U	NA	NA	3.0 U	3.0 U	24	3.0 U	NA	NA	3.0 U	3.0 U
VOLATILES (µg/kg) Method EPA-8260															
Dichlorodifluoromethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Chloromethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Vinyl Chloride		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Bromomethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Chloroethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Carbon Tetrachloride		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Trichlorofluoromethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Carbon Disulfide		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Acetone		50 U	NA	50 U	50 U	50 U	NA	50 U	NA	50 U	50 U	NA	NA	50 U	50 U
1,1-Dichloroethene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Methylene Chloride	20	20 U	NA	20 U	20 U	20 U	NA	20 U	NA	20 U	20 U	NA	NA	20 U	20 U
Acrylonitrile		50 U	NA	50 U	50 U	50 U	NA	50 U	NA	50 U	50 U	NA	NA	50 U	50 U
Methyl T-Butyl Ether		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Trans-1,2-Dichloroethene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,1-Dichloroethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
2-Butanone		50 U	NA	50 U	50 U	50 U	NA	50 U	NA	50 U	50 U	NA	NA	50 U	50 U
Cis-1,2-Dichloroethene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
2,2-Dichloropropane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Bromochloromethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Chloroform		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,1,1-Trichloroethane	2000	10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,1-Dichloropropene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,2-Dichloroethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Benzene	30	5.0 U	NA	5.0 U	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	5.0 U	5.0 U
Trichloroethene	30	10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,2-Dichloropropane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Dibromomethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Bromodichloromethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Trans-1,3-Dichloropropene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
4-Methyl-2-Pentanone		50 U	NA	50 U	50 U	50 U	NA	50 U	NA	50 U	50 U	NA	NA	50 U	50 U
Toluene	7000	10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Cis-1,3-Dichloropropene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,1,2-Trichloroethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
2-Hexanone		50 U	NA	50 U	50 U	50 U	NA	50 U	NA	50 U	50 U	NA	NA	50 U	50 U
1,3-Dichloropropane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Tetrachloroethylene	50	10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Dibromochloromethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,2-Dibromoethane	5	5.0 U	NA	5.0 U	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	5.0 U	5.0 U
Chlorobenzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,1,1,2-Tetrachloroethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Ethylbenzene	6000	10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
m,p-Xylene	9000 (c)	20 U	NA	20 U	20 U	20 U	NA	20 U	NA	20 U	20 U	NA	NA	20 U	20 U
Styrene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
o-Xylene	9000 (c)	10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Bromoform		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Isopropylbenzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,1,2,2-Tetrachloroethane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Former Plywood Plant Parcels Initial Investigation													
		FPP-B01 (0.5-1.5)	FPP-B01 (12-13)	FPP-B02 (1-2)	FPP-B02 (14-15.5)	FPP-B03 (0.5-2)	FPP-B03 (13-14)	FPP-B04 (11-12)	FPP-B04 (21-22)	FPP-B05 (15-16.5)	FPP-B05 (22.5-24)	FPP-B06 (15-16)	FPP-B07 (0.5-1)	FPP-B07 (15-16)	FPP-B08 (5-6.5)
		EV13060128-15 06/18/2013	EV13060128-16 06/18/2013	EV13060128-19 06/19/2013	EV13060128-20 06/19/2013	EV13060128-17 06/18/2013	EV13060128-18 06/18/2013	EV13060128-13 06/18/2013	EV13060128-14 06/18/2013	EV13060128-25 06/19/2013	EV13060128-26 06/19/2013	EV13060128-11 06/18/2013	EV13060128-23 06/19/2013	EV13060128-24 06/19/2013	EV13060128-12 06/18/2013
1,2,3-Trichloropropane		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Bromobenzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
N-Propyl Benzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
2-Chlorotoluene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,3,5-Trimethylbenzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	22 J	10 U	NA	NA	10 U	10 U
4-Chlorotoluene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
T-Butyl Benzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,2,4-Trimethylbenzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	41 J	10 U	NA	NA	10 U	10 U
S-Butyl Benzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
P-Isopropyltoluene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	11 J	10 U	NA	NA	10 U	10 U
1,3 Dichlorobenzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,4-Dichlorobenzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
N-Butylbenzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	12 J	10 U	NA	NA	10 U	10 U
1,2-Dichlorobenzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,2-Dibromo 3-Chloropropane		50 U	NA	50 U	50 U	50 U	NA	50 U	NA	50 U	50 U	NA	NA	50 U	50 U
1,2,4-Trichlorobenzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Hexachlorobutadiene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
Naphthalene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
1,2,3-Trichlorobenzene		10 U	NA	10 U	10 U	10 U	NA	10 U	NA	10 U	10 U	NA	NA	10 U	10 U
SEMIVOLATILES (µg/kg) Method EPA-8270															
Pyridine		200 U	NA	200 U	200 U	200 U	NA	2000 U	NA	400 U	200 U	NA	400 U	200 U	400 U
N-Nitrosodimethylamine		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Phenol		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Aniline		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Bis(2-Chloroethyl)Ether		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
2-Chlorophenol		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
1,3-Dichlorobenzene		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
1,4-Dichlorobenzene		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Benzyl Alcohol		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
1,2-Dichlorobenzene		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
2-Methylphenol		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Bis(2-Chloroisopropyl)Ether		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
3&4-Methylphenol		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
N-Nitroso-Di-N-Propylamine		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Hexachloroethane		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Nitrobenzene		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Isophorone		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
2-Nitrophenol		250 U	NA	250 U	250 U	250 U	NA	2500 U	NA	500 U	250 U	NA	500 U	250 U	500 U
2,4-Dimethylphenol		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Benzoic Acid		1000 U	NA	1000 U	1000 U	1000 U	NA	10000 U	NA	2000 U	1000 U	NA	2000 U	1000 U	2000 U
Bis(2-Chloroethoxy)Methane		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
2,4-Dichlorophenol		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
1,2,4-Trichlorobenzene		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
4-Chloroaniline		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
2,6-Dichlorophenol		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Hexachlorobutadiene		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
4-Chloro-3-Methylphenol		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Hexachlorocyclopentadiene		500 U	NA	500 U	500 U	500 U	NA	5000 U	NA	1000 U	500 U	NA	1000 U	500 U	1000 U
2,4,6-Trichlorophenol		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
2,4,5-Trichlorophenol		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
2-Chloronaphthalene		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
2-Nitroaniline		250 U	NA	250 U	250 U	250 U	NA	2500 U	NA	500 U	250 U	NA	500 U	250 U	500 U
Dimethylphthalate		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
2,6-Dinitrotoluene		250 U	NA	250 U	250 U	250 U	NA	2500 U	NA	500 U	250 U	NA	500 U	250 U	500 U
3-Nitroaniline		250 U	NA	250 U	250 U	250 U	NA	2500 U	NA	500 U	250 U	NA	500 U	250 U	500 U
2,4-Dinitrophenol		250 U	NA	250 U	250 U	250 U	NA	2500 U	NA	500 U	250 U	NA	500 U	250 U	500 U
4-Nitrophenol		500 U	NA	500 U	500 U	500 U	NA	5000 U	NA	1000 U	500 U	NA	1000 U	500 U	1000 U
Dibenzofuran		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
2,4-Dinitrotoluene		250 U	NA	250 U	250 U	250 U	NA	2500 U	NA	500 U	250 U	NA	500 U	250 U	500 U
2,3,4,6-Tetrachlorophenol		250 U	NA	250 U	250 U	250 U	NA	2500 U	NA	500 U	250 U	NA	500 U	250 U	500 U
Diethylphthalate		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
4-Chlorophenyl-Phenylether		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
4-Nitroaniline		250 U	NA	250 U	250 U	250 U	NA	2500 U	NA	500 U	250 U	NA	500 U	250 U	500 U
4,6-Dinitro-2-Methylphenol		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
N-Nitrosodiphenylamine		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Azobenzene		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
4-Bromophenyl-Phenylether		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Table A-6 - Soil Analytical Results, Former Plywood Plant and Triangular Parcels

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Former Plywood Plant Parcels Initial Investigation													
		FPP-B01 (0.5-1.5)	FPP-B01 (12-13)	FPP-B02 (1-2)	FPP-B02 (14-15.5)	FPP-B03 (0.5-2)	FPP-B03 (13-14)	FPP-B04 (11-12)	FPP-B04 (21-22)	FPP-B05 (15-16.5)	FPP-B05 (22.5-24)	FPP-B06 (15-16)	FPP-B07 (0.5-1)	FPP-B07 (15-16)	FPP-B08 (5-6.5)
		EV13060128-15 06/18/2013	EV13060128-16 06/18/2013	EV13060128-19 06/19/2013	EV13060128-20 06/19/2013	EV13060128-17 06/18/2013	EV13060128-18 06/18/2013	EV13060128-13 06/18/2013	EV13060128-14 06/18/2013	EV13060128-25 06/19/2013	EV13060128-26 06/19/2013	EV13060128-11 06/18/2013	EV13060128-23 06/19/2013	EV13060128-24 06/19/2013	EV13060128-12 06/18/2013
Hexachlorobenzene		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Pentachlorophenol		500 U	NA	500 U	500 U	500 U	NA	5000 U	NA	1000 U	500 U	NA	1000 U	500 U	1000 U
Carbazole		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
Di-N-Butylphthalate		130 U	NA	130 U	130 U	130 U	NA	1300 U	NA	260 U	130 U	NA	260 U	130 U	260 U
Butylbenzylphthalate		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
3,3-Dichlorobenzidine		250 U	NA	250 U	250 U	250 U	NA	2500 U	NA	500 U	250 U	NA	500 U	250 U	500 U
Bis(2-Ethylhexyl)Phthalate		130 U	NA	130 U	130 U	130 U	NA	1300 U	NA	260 U	130 U	NA	260 U	130 U	260 U
Di-N-Octylphthalate		100 U	NA	100 U	100 U	100 U	NA	1000 U	NA	200 U	100 U	NA	200 U	100 U	200 U
PAHs (mg/kg) Method EPA-8270 SIM															
Naphthalene		0.052	NA	0.067	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.020 U	0.010 U	0.020 U
2-Methylnaphthalene		0.028	NA	0.025	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.020 U	0.010 U	0.020 U
1-Methylnaphthalene		0.019	NA	0.016	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.020 U	0.010 U	0.020 U
Total Naphthalenes	5 (b)	0.099	NA	0.108	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.020 U	0.010 U	0.020 U
Acenaphthylene		0.019	NA	0.031	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.020 U	0.010 U	0.020 U
Acenaphthene		0.010 U	NA	0.010 U	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.020 U	0.010 U	0.020 U
Fluorene		0.010 U	NA	0.012	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.020 U	0.010 U	0.020 U
Phenanthrene		0.051	NA	0.089	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.048	0.010 U	0.038
Anthracene		0.010 U	NA	0.018	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.020 U	0.010 U	0.020 U
Fluoranthene		0.049	NA	0.092	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.068	0.010 U	0.023
Pyrene		0.053	NA	0.11	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.12	0.010 U	0.045
Benzo[A]Anthracene		0.013	NA	0.028	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.044	0.010 U	0.020 U
Chrysene		0.021	NA	0.033	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.098	0.010 U	0.042
Benzo[B]Fluoranthene		0.019	NA	0.029	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.053	0.010 U	0.025
Benzo[K]Fluoranthene		0.011	NA	0.019	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.037	0.010 U	0.020 U
Benzo[A]Pyrene		0.014	NA	0.030	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.046	0.010 U	0.020 U
Indeno[1,2,3-Cd]Pyrene		0.012	NA	0.018	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.027	0.010 U	0.020 U
Dibenz[A,H]Anthracene		0.010 U	NA	0.010 U	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.020 U	0.010 U	0.020 U
Benzo[G,H,I]Perylene		0.019	NA	0.029	0.010 U	0.010 U	NA	0.10 U	NA	0.020 U	0.010 U	NA	0.037	0.010 U	0.021
cPAH TEQ	0.1	0.020	NA	0.040	ND	ND	NA	ND	NA	ND	ND	NA	0.063	ND	0.003
PCBs (mg/kg) Method EPA-8082															
PCB-1016		0.10 U	NA	NA	0.10 U	0.10 U	NA	0.10 U	NA	0.10 U	0.10 U	NA	NA	NA	NA
PCB-1268		0.10 U	NA	NA	0.10 U	0.10 U	NA	0.10 U	NA	0.10 U	0.10 U	NA	NA	NA	NA
PCB-1221		0.10 U	NA	NA	0.10 U	0.10 U	NA	0.10 U	NA	0.10 U	0.10 U	NA	NA	NA	NA
PCB-1232		0.10 U	NA	NA	0.10 U	0.10 U	NA	0.10 U	NA	0.10 U	0.10 U	NA	NA	NA	NA
PCB-1242		0.10 U	NA	NA	0.10 U	0.10 U	NA	0.10 U	NA	0.10 U	0.10 U	NA	NA	NA	NA
PCB-1248		0.10 U	NA	NA	0.10 U	0.10 U	NA	0.10 U	NA	0.10 U	0.10 U	NA	NA	NA	NA
PCB-1254		0.10 U	NA	NA	0.10 U	0.10 U	NA	0.10 U	NA	0.10 U	0.10 U	NA	NA	NA	NA
PCB-1260		0.10 U	NA	NA	0.10 U	0.10 U	NA	0.10 U	NA	0.10 U	0.10 U	NA	NA	NA	NA
Total PCBs	1	0.10 U	NA	NA	0.10 U	0.10 U	NA	0.10 U	NA	0.10 U	0.10 U	NA	NA	NA	NA
CONVENTIONALS															
Total Organic Carbon (%) (EPA-9060)		NA	NA	NA	0.10 U	NA	NA	NA	NA	0.65	NA	NA	NA	0.15	1.5
pH (SU) (EPA-9045)		NA	NA	NA	8.58	NA	NA	NA	NA	7.11	NA	NA	NA	7.80	8.22
Percent Solids (%) (EPA-160.3)		NA	NA	NA	92.3	NA	NA	NA	NA	90.5	NA	NA	NA	84.0	85.4

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Former Plywood Plant Parcels Initial Investigation												
		FPP-B09 (12-13) EV13060128-22 06/19/2013	FPP-B09 (15-16.5) EV13060128-21 06/19/2013	FPP-B10 (10-11) EV13060128-09 06/18/2013	FPP-B10 (15-16) EV13060128-10 06/18/2013	FPP-B11 (18-19) EV13060128-08 06/18/2013	FPP-B11 (22-23) EV13060128-48 06/18/2013	FPP-B12 (6-7) EV13060128-07 06/17/2013	FPP-B13 (5.5-6.5) EV13060128-06 06/17/2013	FPP-B13 (12-14.5) EV13060128-05 06/17/2013	FPP-B14 (14-15) EV13060128-03 06/17/2013	FPP-B14 (18.5-19.5) EV13060128-04 06/17/2013	FPP-B15 (13.5-14.5) EV13060128-02 06/17/2013	FPP-B16 (11.7-12.7) EV13060128-01 06/17/2013
TOTAL METALS (mg/kg) EPA Methods 6020/7471/7196														
Arsenic	20	2.1	2.9	2.1	2.4	2.4	1.4	1.6	1.6	1.6	1.8	8.4	1.2	2.3
Cadmium	2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chromium	2000	17	13	16	21	14	11	14	19	16	16	14	17	15
Chromium (VI)	19	NA	5.0 U	NA	NA	NA	NA	NA	NA	5.0 U	NA	NA	NA	NA
Iron		25,000	21,000	22,000	22,000	21,000	20,000	18,000	23,000	25,000	23,000	20,000	26,000	22,000
Lead	250	3.5	7.8	4.4	3.6	7.6	2.9	2.1	3.3	2.9	3.0	67	1.7	13
Manganese		290	260	260	200	230	220	240	370	290	300	240	250	230
Mercury	2	0.025	0.025	0.061	0.027	0.032	0.040	0.020 U	0.020 U	0.022	0.020 U	0.075	0.020 U	0.032
TOTAL PETROLEUM HYDROCARBONS (mg/kg) NWTPH-DX														
TPH-Diesel Range	2000	25 U	560 J	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
TPH-Oil Range	2000	50 U	180	50 U	79	170	50 U	50 U	50 U	50 U	50 U	960	50 U	150
NWTPH-GX														
TPH-Gasoline Range	100 (a)	NA	3.0 U	3.0 U	NA	3.0 U	NA	3.0 U	NA	3.0 U	NA	NA	NA	NA
VOLATILES (µg/kg) Method EPA-8260														
Dichlorodifluoromethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Chloromethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Vinyl Chloride		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Bromomethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Chloroethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Carbon Tetrachloride		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Trichlorofluoromethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Carbon Disulfide		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Acetone		NA	50 U	50 U	NA	50 U	NA	50 U	NA	50 U	NA	NA	NA	NA
1,1-Dichloroethene		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Methylene Chloride	20	NA	20 U	20 U	NA	20 U	NA	20 U	NA	20 U	NA	NA	NA	NA
Acrylonitrile		NA	50 U	50 U	NA	50 U	NA	50 U	NA	50 U	NA	NA	NA	NA
Methyl T-Butyl Ether		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Trans-1,2-Dichloroethene		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
1,1-Dichloroethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
2-Butanone		NA	50 U	50 U	NA	50 U	NA	50 U	NA	50 U	NA	NA	NA	NA
Cis-1,2-Dichloroethene		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
2,2-Dichloropropane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Bromochloromethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Chloroform		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
1,1,1-Trichloroethane	2000	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
1,1-Dichloropropene		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
1,2-Dichloroethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Benzene	30	NA	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	NA	NA	NA
Trichloroethene	30	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
1,2-Dichloropropane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Dibromomethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Bromodichloromethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Trans-1,3-Dichloropropene		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
4-Methyl-2-Pentanone		NA	50 U	50 U	NA	50 U	NA	50 U	NA	50 U	NA	NA	NA	NA
Toluene	7000	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Cis-1,3-Dichloropropene		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
1,1,2-Trichloroethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
2-Hexanone		NA	50 U	50 U	NA	50 U	NA	50 U	NA	50 U	NA	NA	NA	NA
1,3-Dichloropropane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Tetrachloroethylene	50	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Dibromochloromethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
1,2-Dibromoethane	5	NA	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	NA	NA	NA
Chlorobenzene		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Ethylbenzene	6000	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
m,p-Xylene	9000 (c)	NA	20 U	20 U	NA	20 U	NA	20 U	NA	20 U	NA	NA	NA	NA
Styrene		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
o-Xylene	9000 (c)	NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Bromoform		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
Isopropylbenzene		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane		NA	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	NA	NA

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Former Plywood Plant Parcels Initial Investigation												
		FPP-B09 (12-13)	FPP-B09 (15-16.5)	FPP-B10 (10-11)	FPP-B10 (15-16)	FPP-B11 (18-19)	FPP-B11 (22-23)	FPP-B12 (6-7)	FPP-B13 (5.5-6.5)	FPP-B13 (12-14.5)	FPP-B14 (14-15)	FPP-B14 (18.5-19.5)	FPP-B15 (13.5-14.5)	FPP-B16 (11.7-12.7)
		EV13060128-22 06/19/2013	EV13060128-21 06/19/2013	EV13060128-09 06/18/2013	EV13060128-10 06/18/2013	EV13060128-08 06/18/2013	EV13060128-48 06/18/2013	EV13060128-07 06/17/2013	EV13060128-06 06/17/2013	EV13060128-05 06/17/2013	EV13060128-03 06/17/2013	EV13060128-04 06/17/2013	EV13060128-02 06/17/2013	EV13060128-01 06/17/2013
1,2,3-Trichloropropane	NA	10 U	10 U	NA	NA	NA	NA							
Bromobenzene	NA	10 U	10 U	NA	NA	NA	NA							
N-Propyl Benzene	NA	10 U	10 U	NA	NA	NA	NA							
2-Chlorotoluene	NA	10 U	10 U	NA	NA	NA	NA							
1,3,5-Trimethylbenzene	NA	10 U	10 U	NA	NA	NA	NA							
4-Chlorotoluene	NA	10 U	10 U	NA	NA	NA	NA							
T-Butyl Benzene	NA	10 U	10 U	NA	NA	NA	NA							
1,2,4-Trimethylbenzene	NA	10 U	10 U	NA	NA	NA	NA							
S-Butyl Benzene	NA	10 U	10 U	NA	NA	NA	NA							
P-Isopropyltoluene	NA	10 U	10 U	NA	NA	NA	NA							
1,3 Dichlorobenzene	NA	10 U	10 U	NA	NA	NA	NA							
1,4-Dichlorobenzene	NA	10 U	10 U	NA	NA	NA	NA							
N-Butylbenzene	NA	10 U	10 U	NA	NA	NA	NA							
1,2-Dichlorobenzene	NA	10 U	10 U	NA	NA	NA	NA							
1,2-Dibromo 3-Chloropropane	NA	50 U	50 U	NA	NA	NA	NA							
1,2,4-Trichlorobenzene	NA	10 U	10 U	NA	NA	NA	NA							
Hexachlorobutadiene	NA	10 U	10 U	NA	NA	NA	NA							
Naphthalene	NA	10 U	10 U	NA	NA	NA	NA							
1,2,3-Trichlorobenzene	NA	10 U	10 U	NA	NA	NA	NA							
SEMIVOLATILES (µg/kg) Method EPA-8270														
Pyridine	NA	200 U	200 U	NA	NA	NA	NA							
N-Nitrosodimethylamine	NA	100 U	100 U	NA	NA	NA	NA							
Phenol	NA	100 U	100 U	NA	NA	NA	NA							
Aniline	NA	100 U	100 U	NA	NA	NA	NA							
Bis(2-Chloroethyl)Ether	NA	100 U	100 U	NA	NA	NA	NA							
2-Chlorophenol	NA	100 U	100 U	NA	NA	NA	NA							
1,3-Dichlorobenzene	NA	100 U	100 U	NA	NA	NA	NA							
1,4-Dichlorobenzene	NA	100 U	100 U	NA	NA	NA	NA							
Benzyl Alcohol	NA	100 U	100 U	NA	NA	NA	NA							
1,2-Dichlorobenzene	NA	100 U	100 U	NA	NA	NA	NA							
2-Methylphenol	NA	100 U	100 U	NA	NA	NA	NA							
Bis(2-Chloroisopropyl)Ether	NA	100 U	100 U	NA	NA	NA	NA							
3&4-Methylphenol	NA	100 U	100 U	NA	NA	NA	NA							
N-Nitroso-Di-N-Propylamine	NA	100 U	100 U	NA	NA	NA	NA							
Hexachloroethane	NA	100 U	100 U	NA	NA	NA	NA							
Nitrobenzene	NA	100 U	100 U	NA	NA	NA	NA							
Isophorone	NA	100 U	100 U	NA	NA	NA	NA							
2-Nitrophenol	NA	250 U	250 U	NA	NA	NA	NA							
2,4-Dimethylphenol	NA	100 U	100 U	NA	NA	NA	NA							
Benzoic Acid	NA	1000 U	1000 U	NA	NA	NA	NA							
Bis(2-Chloroethoxy)Methane	NA	100 U	100 U	NA	NA	NA	NA							
2,4-Dichlorophenol	NA	100 U	100 U	NA	NA	NA	NA							
1,2,4-Trichlorobenzene	NA	100 U	100 U	NA	NA	NA	NA							
4-Chloroaniline	NA	100 U	100 U	NA	NA	NA	NA							
2,6-Dichlorophenol	NA	100 U	100 U	NA	NA	NA	NA							
Hexachlorobutadiene	NA	100 U	100 U	NA	NA	NA	NA							
4-Chloro-3-Methylphenol	NA	100 U	100 U	NA	NA	NA	NA							
Hexachlorocyclopentadiene	NA	500 U	500 U	NA	NA	NA	NA							
2,4,6-Trichlorophenol	NA	100 U	100 U	NA	NA	NA	NA							
2,4,5-Trichlorophenol	NA	100 U	100 U	NA	NA	NA	NA							
2-Chloronaphthalene	NA	100 U	100 U	NA	NA	NA	NA							
2-Nitroaniline	NA	250 U	250 U	NA	NA	NA	NA							
Dimethylphthalate	NA	100 U	100 U	NA	NA	NA	NA							
2,6-Dinitrotoluene	NA	250 U	250 U	NA	NA	NA	NA							
3-Nitroaniline	NA	250 U	250 U	NA	NA	NA	NA							
2,4-Dinitrophenol	NA	250 U	250 U	NA	NA	NA	NA							
4-Nitrophenol	NA	500 U	500 U	NA	NA	NA	NA							
Dibenzofuran	NA	100 U	100 U	NA	NA	NA	NA							
2,4-Dinitrotoluene	NA	250 U	250 U	NA	NA	NA	NA							
2,3,4,6-Tetrachlorophenol	NA	250 U	250 U	NA	NA	NA	NA							
Diethylphthalate	NA	100 U	100 U	NA	NA	NA	NA							
4-Chlorophenyl-Phenylether	NA	100 U	100 U	NA	NA	NA	NA							
4-Nitroaniline	NA	250 U	250 U	NA	NA	NA	NA							
4,6-Dinitro-2-Methylphenol	NA	100 U	100 U	NA	NA	NA	NA							
N-Nitrosodiphenylamine	NA	100 U	100 U	NA	NA	NA	NA							
Azobenzene	NA	100 U	100 U	NA	NA	NA	NA							
4-Bromophenyl-Phenylether	NA	100 U	100 U	NA	NA	NA	NA							

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Former Plywood Plant Parcels Initial Investigation												
		FPP-B09 (12-13)	FPP-B09 (15-16.5)	FPP-B10 (10-11)	FPP-B10 (15-16)	FPP-B11 (18-19)	FPP-B11 (22-23)	FPP-B12 (6-7)	FPP-B13 (5.5-6.5)	FPP-B13 (12-14.5)	FPP-B14 (14-15)	FPP-B14 (18.5-19.5)	FPP-B15 (13.5-14.5)	FPP-B16 (11.7-12.7)
		EV13060128-22 06/19/2013	EV13060128-21 06/19/2013	EV13060128-09 06/18/2013	EV13060128-10 06/18/2013	EV13060128-08 06/18/2013	EV13060128-48 06/18/2013	EV13060128-07 06/17/2013	EV13060128-06 06/17/2013	EV13060128-05 06/17/2013	EV13060128-03 06/17/2013	EV13060128-04 06/17/2013	EV13060128-02 06/17/2013	EV13060128-01 06/17/2013
Hexachlorobenzene		NA	100 U	100 U	NA	NA	NA	NA						
Pentachlorophenol		NA	500 U	500 U	NA	NA	NA	NA						
Carbazole		NA	100 U	100 U	NA	NA	NA	NA						
Di-N-Butylphthalate		NA	130 U	130 U	NA	NA	NA	NA						
Butylbenzylphthalate		NA	100 U	100 U	NA	NA	NA	NA						
3,3-Dichlorobenzidine		NA	250 U	250 U	NA	NA	NA	NA						
Bis(2-Ethylhexyl)Phthalate		NA	130 U	130 U	NA	NA	NA	NA						
Di-N-Octylphthalate		NA	100 U	100 U	NA	NA	NA	NA						
PAHs (mg/kg) Method EPA-8270 SIM														
Naphthalene		NA	0.074	0.012	NA	0.14	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
2-Methylnaphthalene		NA	0.013	0.010 U	NA	0.012	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
1-Methylnaphthalene		NA	0.010 U	0.010 U	NA	NA	NA	NA						
Total Naphthalenes	5 (b)	NA	0.087	0.012	NA	0.152	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
Acenaphthylene		NA	0.029	0.010 U	NA	0.054	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
Acenaphthene		NA	0.010 U	0.010 U	NA	0.013	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
Fluorene		NA	0.010 U	0.010 U	NA	NA	NA	NA						
Phenanthrene		NA	0.040	0.010 U	NA	0.075	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
Anthracene		NA	0.010 U	0.010 U	NA	0.014	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
Fluoranthene		NA	0.038	0.010 U	NA	0.069	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
Pyrene		NA	0.046	0.010 U	NA	0.081	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
Benzo[A]Anthracene		NA	0.010 U	0.010 U	NA	0.011	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
Chrysene		NA	0.010 U	0.010 U	NA	0.012	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
Benzo[B]Fluoranthene		NA	0.010 U	0.010 U	NA	0.011	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
Benzo[K]Fluoranthene		NA	0.010 U	0.010 U	NA	NA	NA	NA						
Benzo[A]Pyrene		NA	0.010 U	0.010 U	NA	0.012	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
Indeno[1,2,3-Cd]Pyrene		NA	0.010 U	0.010 U	NA	NA	NA	NA						
Dibenz[A,H]Anthracene		NA	0.010 U	0.010 U	NA	NA	NA	NA						
Benzo[G,H,I]Perylene		NA	0.010 U	0.010 U	NA	0.015	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA
cPAH TEQ	0.1	NA	ND	ND	NA	0.014	NA	ND	NA	ND	NA	NA	NA	NA
PCBs (mg/kg) Method EPA-8082														
PCB-1016		NA	0.10 U	0.10 U	NA	NA	NA	NA						
PCB-1268		NA	0.10 U	0.10 U	NA	NA	NA	NA						
PCB-1221		NA	0.10 U	0.10 U	NA	NA	NA	NA						
PCB-1232		NA	0.10 U	0.10 U	NA	NA	NA	NA						
PCB-1242		NA	0.10 U	0.10 U	NA	NA	NA	NA						
PCB-1248		NA	0.10 U	0.10 U	NA	NA	NA	NA						
PCB-1254		NA	0.10 U	0.10 U	NA	NA	NA	NA						
PCB-1260		NA	0.10 U	0.10 U	NA	NA	NA	NA						
Total PCBs	1	NA	0.10 U	0.10 U	NA	NA	NA	NA						
CONVENTIONALS														
Total Organic Carbon (%) (EPA-9060)		NA	3.3	NA	NA	NA	NA	NA	NA	0.11	NA	NA	NA	NA
pH (SU) (EPA-9045)		NA	6.39	NA	NA	NA	NA	NA	NA	8.86	NA	NA	NA	NA
Percent Solids (%) (EPA-160.3)		NA	73.6	NA										

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Former Plywood Plant Parcels Initial Investigation										Former Plywood Plant Parcels Supplemental Investigation				
		FPP-B17 (0.5-1.5)	FPP-B17 (16-17)	FPP-B18 (16.5-17.5)	FPP-B19 (11-12)	FPP-B20 (10-11)	FPP-B21 (13-14)	FPP-B22 (12.5-13.5)	FPP-B23 (11.5-12.5)	FPP-B24 (15-16.5)	FPP-B25-S (15-16)	FPP-B26-S (15-16)	FPP-B27-S (5-6)	FPP-B28-S (15-16)	FPP-B29a-S (15-16)	
		EV13060128-46 06/21/2013	EV13060128-45 06/21/2013	EV13060128-27 06/19/2013	EV13060128-28 06/19/2013	EV13060128-33 06/20/2013	EV13060128-31 06/20/2013	EV13060128-30 06/20/2013	EV13060128-29 06/20/2013	EV13060128-32 06/20/2013	EV13080134-26 08/21/2013	EV13080134-22 08/21/2013	EV13080134-17 08/21/2013	EV13080134-52 08/23/2013	EV13080134-44 08/22/2013	
TOTAL METALS (mg/kg)																
EPA Methods 6020/7471/7196																
Arsenic	20	2.5	2.1	1.9	NA	2.4	2.1	2.0	1.9	2.4	2.0	1.9	1.0 U	2.0	3.7	
Cadmium	2	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U							
Chromium	2000	21	19	28	NA	9.3	11	15	12	17	110	25	19	17	20	
Chromium (VI)	19	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	NA	NA	NA	NA	
Iron		27,000	23,000	23,000	NA	31,000	22,000	22,000	24,000	24,000	40,000	21,000	20,000	21,000	31,000	
Lead	250	10	5.0	6.3	NA	30	3.0	3.3	2.9	6.7	3.8	3.3	11	4.2	5.3	
Manganese		320	240	290	NA	560	340	310	370	250	320	250	300	220	570	
Mercury	2	0.055	0.047	0.027	NA	0.079	0.025	0.024	0.031	0.028	0.020 U	0.023	0.15	0.021	0.092	
TOTAL PETROLEUM HYDROCARBONS (mg/kg)																
NWTPH-DX																
TPH-Diesel Range	2000	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	44	50 U	250 U	120 U	
TPH-Oil Range	2000	87	88	190	140	130	50 U	50 U	50 U	440	50 U	140	1300	6100	2000	
NWTPH-GX																
TPH-Gasoline Range	100 (a)	NA	3.0 U	NA	3.0 U	3.0 U	NA	NA	NA	3.0 U	NA	NA	NA	NA	NA	
VOLATILES (µg/kg)																
Method EPA-8260																
Dichlorodifluoromethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Chloromethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Vinyl Chloride		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Bromomethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Chloroethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Carbon Tetrachloride		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Trichlorofluoromethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Carbon Disulfide		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Acetone		NA	50 U	50 U	50 U	50 U	NA	NA	NA	50 U	NA	NA	NA	NA	NA	
1,1-Dichloroethene		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Methylene Chloride	20	NA	20 U	20 U	20 U	20 U	NA	NA	NA	20 U	NA	NA	NA	NA	NA	
Acrylonitrile		NA	50 U	50 U	50 U	50 U	NA	NA	NA	50 U	NA	NA	NA	NA	NA	
Methyl T-Butyl Ether		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Trans-1,2-Dichloroethene		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,1-Dichloroethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
2-Butanone		NA	50 U	50 U	50 U	50 U	NA	NA	NA	50 U	NA	NA	NA	NA	NA	
Cis-1,2-Dichloroethene		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
2,2-Dichloropropane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Bromochloromethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Chloroform		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,1,1-Trichloroethane	2000	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,1-Dichloropropene		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,2-Dichloroethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Benzene	30	NA	5.0 U	5.0 U	5.0 U	5.0 U	NA	NA	NA	5.0 U	NA	NA	NA	NA	NA	
Trichloroethene	30	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,2-Dichloropropane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Dibromomethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Bromodichloromethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Trans-1,3-Dichloropropene		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
4-Methyl-2-Pentanone		NA	50 U	50 U	50 U	50 U	NA	NA	NA	50 U	NA	NA	NA	NA	NA	
Toluene	7000	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Cis-1,3-Dichloropropene		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,1,2-Trichloroethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
2-Hexanone		NA	50 U	50 U	50 U	50 U	NA	NA	NA	50 U	NA	NA	NA	NA	NA	
1,3-Dichloropropane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Tetrachloroethylene	50	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Dibromochloromethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,2-Dibromoethane	5	NA	5.0 U	5.0 U	5.0 U	5.0 U	NA	NA	NA	5.0 U	NA	NA	NA	NA	NA	
Chlorobenzene		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,1,1,2-Tetrachloroethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Ethylbenzene	6000	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
m,p-Xylene	9000 (c)	NA	20 U	20 U	20 U	20 U	NA	NA	NA	20 U	NA	NA	NA	NA	NA	
Styrene		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
o-Xylene	9000 (c)	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Bromoform		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Isopropylbenzene		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,1,2,2-Tetrachloroethane		NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Former Plywood Plant Parcels Initial Investigation									Former Plywood Plant Parcels Supplemental Investigation				
		FPP-B17 (0.5-1.5)	FPP-B17 (16-17)	FPP-B18 (16.5-17.5)	FPP-B19 (11-12)	FPP-B20 (10-11)	FPP-B21 (13-14)	FPP-B22 (12.5-13.5)	FPP-B23 (11.5-12.5)	FPP-B24 (15-16.5)	FPP-B25-S (15-16)	FPP-B26-S (15-16)	FPP-B27-S (5-6)	FPP-B28-S (15-16)	FPP-B29a-S (15-16)
		EV13060128-46 06/21/2013	EV13060128-45 06/21/2013	EV13060128-27 06/19/2013	EV13060128-28 06/19/2013	EV13060128-33 06/20/2013	EV13060128-31 06/20/2013	EV13060128-30 06/20/2013	EV13060128-29 06/20/2013	EV13060128-32 06/20/2013	EV13080134-26 08/21/2013	EV13080134-22 08/21/2013	EV13080134-17 08/21/2013	EV13080134-52 08/23/2013	EV13080134-44 08/22/2013
1,2,3-Trichloropropane	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Bromobenzene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
N-Propyl Benzene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
2-Chlorotoluene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,3,5-Trimethylbenzene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
4-Chlorotoluene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
T-Butyl Benzene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,2,4-Trimethylbenzene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
S-Butyl Benzene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
P-Isopropyltoluene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,3 Dichlorobenzene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,4-Dichlorobenzene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
N-Butylbenzene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,2-Dichlorobenzene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,2-Dibromo 3-Chloropropane	NA	50 U	50 U	50 U	50 U	NA	NA	NA	50 U	NA	NA	NA	NA	NA	
1,2,4-Trichlorobenzene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Hexachlorobutadiene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
Naphthalene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
1,2,3-Trichlorobenzene	NA	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	
SEMIVOLATILES (µg/kg)															
Method EPA-8270															
Pyridine	NA	200 U	NA	NA	200 U	NA	NA	NA	200 U	NA	NA	NA	NA	NA	
N-Nitrosodimethylamine	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
Phenol	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
Aniline	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
Bis(2-Chloroethyl)Ether	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
2-Chlorophenol	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
1,3-Dichlorobenzene	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
1,4-Dichlorobenzene	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
Benzyl Alcohol	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
1,2-Dichlorobenzene	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
2-Methylphenol	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
Bis(2-Chloroisopropyl)Ether	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
3&4-Methylphenol	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
N-Nitroso-Di-N-Propylamine	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
Hexachloroethane	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
Nitrobenzene	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
Isophorone	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
2-Nitrophenol	NA	250 U	NA	NA	250 U	NA	NA	NA	250 U	NA	NA	NA	NA	NA	
2,4-Dimethylphenol	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
Benzoic Acid	NA	1000 U	NA	NA	1000 U	NA	NA	NA	1000 U	NA	NA	NA	NA	NA	
Bis(2-Chloroethoxy)Methane	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
2,4-Dichlorophenol	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
1,2,4-Trichlorobenzene	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
4-Chloroaniline	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
2,6-Dichlorophenol	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
Hexachlorobutadiene	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
4-Chloro-3-Methylphenol	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
Hexachlorocyclopentadiene	NA	500 U	NA	NA	500 U	NA	NA	NA	500 U	NA	NA	NA	NA	NA	
2,4,6-Trichlorophenol	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
2,4,5-Trichlorophenol	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
2-Chloronaphthalene	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
2-Nitroaniline	NA	250 U	NA	NA	250 U	NA	NA	NA	250 U	NA	NA	NA	NA	NA	
Dimethylphthalate	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
2,6-Dinitrotoluene	NA	250 U	NA	NA	250 U	NA	NA	NA	250 U	NA	NA	NA	NA	NA	
3-Nitroaniline	NA	250 U	NA	NA	250 U	NA	NA	NA	250 U	NA	NA	NA	NA	NA	
2,4-Dinitrophenol	NA	250 U	NA	NA	250 U	NA	NA	NA	250 U	NA	NA	NA	NA	NA	
4-Nitrophenol	NA	500 U	NA	NA	500 U	NA	NA	NA	500 U	NA	NA	NA	NA	NA	
Dibenzofuran	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
2,4-Dinitrotoluene	NA	250 U	NA	NA	250 U	NA	NA	NA	250 U	NA	NA	NA	NA	NA	
2,3,4,6-Tetrachlorophenol	NA	250 U	NA	NA	250 U	NA	NA	NA	250 U	NA	NA	NA	NA	NA	
Diethylphthalate	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
4-Chlorophenyl-Phenylether	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
4-Nitroaniline	NA	250 U	NA	NA	250 U	NA	NA	NA	250 U	NA	NA	NA	NA	NA	
4,6-Dinitro-2-Methylphenol	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
N-Nitrosodiphenylamine	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
Azobenzene	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	
4-Bromophenyl-Phenylether	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	NA	

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Former Plywood Plant Parcels Initial Investigation									Former Plywood Plant Parcels Supplemental Investigation				
		FPP-B17 (0.5-1.5) EV13060128-46 06/21/2013	FPP-B17 (16-17) EV13060128-45 06/21/2013	FPP-B18 (16.5-17.5) EV13060128-27 06/19/2013	FPP-B19 (11-12) EV13060128-28 06/19/2013	FPP-B20 (10-11) EV13060128-33 06/20/2013	FPP-B21 (13-14) EV13060128-31 06/20/2013	FPP-B22 (12.5-13.5) EV13060128-30 06/20/2013	FPP-B23 (11.5-12.5) EV13060128-29 06/20/2013	FPP-B24 (15-16.5) EV13060128-32 06/20/2013	FPP-B25-S (15-16) EV13080134-26 08/21/2013	FPP-B26-S (15-16) EV13080134-22 08/21/2013	FPP-B27-S (5-6) EV13080134-17 08/21/2013	FPP-B28-S (15-16) EV13080134-52 08/23/2013	FPP-B29a-S (15-16) EV13080134-44 08/22/2013
Hexachlorobenzene		NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	
Pentachlorophenol		NA	500 U	NA	NA	500 U	NA	NA	NA	500 U	NA	NA	NA	NA	
Carbazole		NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	
Di-N-Butylphthalate		NA	130 U	NA	NA	130 U	NA	NA	NA	130 U	NA	NA	NA	NA	
Butylbenzylphthalate		NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	
3,3-Dichlorobenzidine		NA	250 U	NA	NA	250 U	NA	NA	NA	250 U	NA	NA	NA	NA	
Bis(2-Ethylhexyl)Phthalate		NA	130 U	NA	NA	150	NA	NA	NA	130 U	NA	NA	NA	NA	
Di-N-Octylphthalate		NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	NA	NA	
PAHs (mg/kg) Method EPA-8270 SIM															
Naphthalene		NA	0.030	NA	NA	0.010 U	NA	NA	NA	0.014	NA	NA	NA	NA	
2-Methylnaphthalene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
1-Methylnaphthalene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
Total Naphthalenes	5 (b)	NA	0.030	NA	NA	0.010 U	NA	NA	NA	0.014	NA	NA	NA	NA	
Acenaphthylene		NA	0.011	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
Acenaphthene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
Fluorene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
Phenanthrene		NA	0.018	NA	NA	0.012	NA	NA	NA	0.015	NA	NA	NA	NA	
Anthracene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
Fluoranthene		NA	0.016	NA	NA	0.011	NA	NA	NA	0.012	NA	NA	NA	NA	
Pyrene		NA	0.020	NA	NA	0.013	NA	NA	NA	0.015	NA	NA	NA	NA	
Benzo[A]Anthracene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
Chrysene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
Benzo[B]Fluoranthene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
Benzo[K]Fluoranthene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
Benzo[A]Pyrene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
Indeno[1,2,3-Cd]Pyrene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
Dibenz[A,H]Anthracene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
Benzo[G,H,I]Perylene		NA	0.010 U	NA	NA	0.010 U	NA	NA	NA	0.010 U	NA	NA	NA	NA	
cPAH TEQ	0.1	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	NA	NA	
PCBs (mg/kg) Method EPA-8082															
PCB-1016		NA	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	
PCB-1268		NA	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	
PCB-1221		NA	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	
PCB-1232		NA	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	
PCB-1242		NA	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	
PCB-1248		NA	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	
PCB-1254		NA	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	
PCB-1260		NA	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	
Total PCBs	1	NA	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	NA	NA	NA	0.10 U	
CONVENTIONALS															
Total Organic Carbon (%) (EPA-9060)		NA	NA	NA	NA	NA	NA	0.10 U	NA	2.2	NA	0.14	NA	NA	
pH (SU) (EPA-9045)		NA	NA	NA	NA	7.89	NA	8.33	NA	8.10	NA	NA	NA	NA	
Percent Solids (%) (EPA-160.3)		NA	NA	NA	NA	NA	NA	93.2	NA	78.1	NA	NA	NA	NA	

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Former Plywood Plant Parcels Supplemental Investigation										Triangular Parcel Initial Investigation			
		FPP-B29b-S (15-16) EV13080134-56 08/23/2013	FPP-B29c-S (15-16) EV13080134-60 08/23/2013	FPP-B30-S (14-15) EV13080134-30 08/22/2013	FPP-B31-S (15-16) EV13080134-39 08/22/2013	FPP-B32-S (15-16) EV13080134-48 08/22/2013	FPP-B33-S (10-11) EV13080134-35 08/22/2013	FPP-B34-S (15-16) EV13080134-33 08/22/2013	FPP-MW-1-S (8.5-9) EV13080134-08 08/20/2013	FPP-MW-2-S (8.5-9.5) EV13080134-12 08/20/2013	FPP-MW-3-S (13.5-14.5) EV13080134-15 08/20/2013	TP-B01 (1-2) EV13060128-47 06/21/2013	TP-B01 (6.5-7.5) EV13060128-39 06/21/2013	TP-B02 (13-14) EV13060128-38 06/20/2013	TP-B03 (15-16) EV13060128-37 06/20/2013
TOTAL METALS (mg/kg)															
EPA Methods 6020/7471/7196															
Arsenic	20	4.0	3.0	3.0	2.1	2.6	1.9	2.1	2.3	2.1	2.9	3.7	1.9	1.9	1.9
Cadmium	2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chromium	2000	17	20	16	17	18	21	35	50	26	16	17	11	12	9.4
Chromium (VI)	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U
Iron		30,000	31,000	29,000	21,000	24,000	21,000	23,000	28,000	25,000	18,000	29,000	21,000	23,000	22,000
Lead	250	5.5	5.7	23	10	5.4	2.5	5.0	6.2	4.1	6.6	20	4.8	5.4	3.3
Manganese		560	410	460	300	370	290	300	330	310	200	530	350	350	330
Mercury	2	0.082	0.12	0.093	0.050	0.15	0.022	0.022	0.024	0.025	0.028	0.12	0.027	0.12	0.027
TOTAL PETROLEUM HYDROCARBONS (mg/kg)															
NWTPH-DX															
TPH-Diesel Range	2000	25 U	120 U	130 J	25 UJ	25 U	25 U	25 U	25 U	25 U	46	25 U	25 U	25 U	25 U
TPH-Oil Range	2000	560	3500	240	820 J	50 U	50 U	50 U	50 U	67	55	57	50 U	50 U	50 U
NWTPH-GX															
TPH-Gasoline Range	100 (a)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.0 U	3.0 U	NA
VOLATILES (µg/kg)															
Method EPA-8260															
Dichlorodifluoromethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Chloromethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Vinyl Chloride		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Bromomethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Chloroethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Carbon Tetrachloride		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Trichlorofluoromethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Carbon Disulfide		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Acetone		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50 U	50 U	50 U
1,1-Dichloroethene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Methylene Chloride	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U	20 U	20 U
Acrylonitrile		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50 U	50 U	50 U
Methyl T-Butyl Ether		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Trans-1,2-Dichloroethene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,1-Dichloroethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
2-Butanone		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50 U	50 U	50 U
Cis-1,2-Dichloroethene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
2,2-Dichloropropane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Bromochloromethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Chloroform		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,1,1-Trichloroethane	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,1-Dichloropropene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,2-Dichloroethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Benzene	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	5.0 U	5.0 U
Trichloroethene	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,2-Dichloropropane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Dibromomethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Bromodichloromethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Trans-1,3-Dichloropropene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
4-Methyl-2-Pentanone		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50 U	50 U	50 U
Toluene	7000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Cis-1,3-Dichloropropene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,1,2-Trichloroethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
2-Hexanone		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50 U	50 U	50 U
1,3-Dichloropropane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Tetrachloroethylene	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Dibromochloromethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,2-Dibromoethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	5.0 U	5.0 U
Chlorobenzene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,1,1,2-Tetrachloroethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Ethylbenzene	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
m,p-Xylene	9000 (c)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U	20 U	20 U
Styrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
o-Xylene	9000 (c)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Bromoform		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Isopropylbenzene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Former Plywood Plant Parcels Supplemental Investigation										Triangular Parcel Initial Investigation			
		FPP-B29b-S (15-16)	FPP-B29c-S (15-16)	FPP-B30-S (14-15)	FPP-B31-S (15-16)	FPP-B32-S (15-16)	FPP-B33-S (10-11)	FPP-B34-S (15-16)	FPP-MW-1-S (8.5-9)	FPP-MW-2-S (8.5-9.5)	FPP-MW-3-S (13.5-14.5)	TP-B01 (1-2)	TP-B01 (6.5-7.5)	TP-B02 (13-14)	TP-B03 (15-16)
		EV13080134-56 08/23/2013	EV13080134-60 08/23/2013	EV13080134-30 08/22/2013	EV13080134-39 08/22/2013	EV13080134-48 08/22/2013	EV13080134-35 08/22/2013	EV13080134-33 08/22/2013	EV13080134-08 08/20/2013	EV13080134-12 08/20/2013	EV13080134-15 08/20/2013	EV13060128-47 06/21/2013	EV13060128-39 06/21/2013	EV13060128-38 06/20/2013	EV13060128-37 06/20/2013
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
N-Propyl Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
T-Butyl Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
S-Butyl Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
P-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,3 Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
N-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,2-Dibromo 3-Chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50 U	50 U	50 U
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U
SEMIVOLATILES (µg/kg) Method EPA-8270															
Pyridine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	200 U	200 U	200 U	NA
N-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Phenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Aniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Bis(2-Chloroethyl)Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Benzyl Alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
2-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Bis(2-Chloroisopropyl)Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
3&4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
N-Nitroso-Di-N-Propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Isophorone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250 U	250 U	250 U	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Benzoic Acid	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1000 U	1000 U	1000 U	NA
Bis(2-Chloroethoxy)Methane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
2,6-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
4-Chloro-3-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	500 U	500 U	500 U	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250 U	250 U	250 U	NA
Dimethylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250 U	250 U	250 U	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250 U	250 U	250 U	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250 U	250 U	250 U	NA
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	500 U	500 U	500 U	NA
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250 U	250 U	250 U	NA
2,3,4,6-Tetrachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250 U	250 U	250 U	NA
Diethylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
4-Chlorophenyl-Phenylether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250 U	250 U	250 U	NA
4,6-Dinitro-2-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
N-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Azobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
4-Bromophenyl-Phenylether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Former Plywood Plant Parcels Supplemental Investigation										Triangular Parcel Initial Investigation			
		FPP-B29b-S (15-16) EV13080134-56 08/23/2013	FPP-B29c-S (15-16) EV13080134-60 08/23/2013	FPP-B30-S (14-15) EV13080134-30 08/22/2013	FPP-B31-S (15-16) EV13080134-39 08/22/2013	FPP-B32-S (15-16) EV13080134-48 08/22/2013	FPP-B33-S (10-11) EV13080134-35 08/22/2013	FPP-B34-S (15-16) EV13080134-33 08/22/2013	FPP-MW-1-S (8.5-9) EV13080134-08 08/20/2013	FPP-MW-2-S (8.5-9.5) EV13080134-12 08/20/2013	FPP-MW-3-S (13.5-14.5) EV13080134-15 08/20/2013	TP-B01 (1-2) EV13060128-47 06/21/2013	TP-B01 (6.5-7.5) EV13060128-39 06/21/2013	TP-B02 (13-14) EV13060128-38 06/20/2013	TP-B03 (15-16) EV13060128-37 06/20/2013
Hexachlorobenzene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Pentachlorophenol		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	500 U	500 U	500 U	NA
Carbazole		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
Di-N-Butylphthalate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	130 U	130 U	130 U	NA
Butylbenzylphthalate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
3,3-Dichlorobenzidine		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250 U	250 U	250 U	NA
Bis(2-Ethylhexyl)Phthalate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	130 U	130 U	130 U	NA
Di-N-Octylphthalate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100 U	100 U	100 U	NA
PAHs (mg/kg) Method EPA-8270 SIM															
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
2-Methylnaphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
1-Methylnaphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
Total Naphthalenes	5 (b)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
Acenaphthylene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
Acenaphthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
Fluorene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
Phenanthrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.011	0.010 U	0.010 U	NA
Anthracene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.012	0.010 U	0.010 U	NA
Pyrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.016	0.010 U	0.010 U	NA
Benzo[A]Anthracene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
Chrysene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
Benzo[B]Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.014	0.010 U	0.010 U	NA
Benzo[K]Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
Benzo[A]Pyrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
Indeno[1,2,3-Cd]Pyrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.018	0.010 U	0.010 U	NA
Dibenz[A,H]Anthracene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	NA
Benzo[G,H,I]Perylene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.028	0.010 U	0.010 U	NA
cPAH TEQ	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.003	ND	ND	NA
PCBs (mg/kg) Method EPA-8082															
PCB-1016		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA
PCB-1268		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA
PCB-1221		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA
PCB-1232		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA
PCB-1242		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA
PCB-1248		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA
PCB-1254		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA
PCB-1260		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA
Total PCBs	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA
CONVENTIONALS															
Total Organic Carbon (%) (EPA-9060)		NA	NA	2.8	NA	NA	0.091	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU) (EPA-9045)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids (%) (EPA-160.3)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Triangular Parcel Initial Investigation								Triangular Parcel Supp. Invest.	
		TP-B04 (2-3) EV13060128-34 06/20/2013	TP-B04B (11.5-13) EV13060128-35 06/20/2013	TP-B06 (13.5-14) EV13060128-36 06/20/2013	TP-B07 (14-15) EV13060128-40 06/21/2013	TP-B08 (7-8) EV13060128-44 06/21/2013	TP-B08 (16-17.5) EV13060128-43 06/21/2013	TP-B09 (6-7) EV13060128-42 06/21/2013	TP-B09 (13-14) EV13060128-41 06/21/2013	TP-MW-1-S (13.5-14.5) EV13080134-03 08/19/2013	TP-MW-2-S (14-15) EV13080134-06 08/19/2013
TOTAL METALS (mg/kg)											
EPA Methods 6020/7471/7196											
Arsenic	20	5.8	1.8	4.4	3.1	2.7	2.5	4.5	2.1	2.1	2.3
Cadmium	2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chromium	2000	17	19	22	22	13	16	22	20	12	16
Chromium (VI)	19	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	NA
Iron		33,000	24,000	29,000	32,000	16,000	24,000	28,000	21,000	22,000	21,000
Lead	250	28	3.4	7.4	8.0	6.9	4.9	32	7.7	3.3	3.4
Manganese		1200	290	300	300	260	250	430	170	300	240
Mercury	2	0.091	0.023	0.094	0.076	0.038	0.085	0.055	0.092	0.025	0.021
TOTAL PETROLEUM HYDROCARBONS (mg/kg)											
NWTPH-DX											
TPH-Diesel Range	2000	35 U	50 U	30 U	29 U	25 U	360	29 U	27 U	25 U	48
TPH-Oil Range	2000	510	1700	61	76	180	50 U	130	59	50 U	50 U
NWTPH-GX											
TPH-Gasoline Range	100 (a)	NA	3.0 U	NA	NA	17	3.0 U	NA	3.0 U	NA	NA
VOLATILES (µg/kg)											
Method EPA-8260											
Dichlorodifluoromethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Chloromethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Vinyl Chloride		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Bromomethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Chloroethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Carbon Tetrachloride		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Trichlorofluoromethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Carbon Disulfide		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Acetone		NA	50 U	NA	50 U	NA	50 U	50 U	50 U	NA	NA
1,1-Dichloroethene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Methylene Chloride	20	NA	20 U	NA	20 U	NA	20 U	20 U	20 U	NA	NA
Acrylonitrile		NA	50 U	NA	50 U	NA	50 U	50 U	50 U	NA	NA
Methyl T-Butyl Ether		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Trans-1,2-Dichloroethene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,1-Dichloroethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
2-Butanone		NA	50 U	NA	50 U	NA	50 U	50 U	50 U	NA	NA
Cis-1,2-Dichloroethene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
2,2-Dichloropropane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Bromochloromethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Chloroform		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,1,1-Trichloroethane	2000	NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,1-Dichloropropene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,2-Dichloroethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Benzene	30	NA	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	5.0 U	NA	NA
Trichloroethene	30	NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,2-Dichloropropane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Dibromomethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Bromodichloromethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Trans-1,3-Dichloropropene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
4-Methyl-2-Pentanone		NA	50 U	NA	50 U	NA	50 U	50 U	50 U	NA	NA
Toluene	7000	NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Cis-1,3-Dichloropropene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,1,2-Trichloroethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
2-Hexanone		NA	50 U	NA	50 U	NA	50 U	50 U	50 U	NA	NA
1,3-Dichloropropane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Tetrachloroethylene	50	NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Dibromochloromethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,2-Dibromoethane	5	NA	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	5.0 U	NA	NA
Chlorobenzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,1,1,2-Tetrachloroethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Ethylbenzene	6000	NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
m,p-Xylene	9000 (c)	NA	20 U	NA	20 U	NA	20 U	20 U	20 U	NA	NA
Styrene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
o-Xylene	9000 (c)	NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Bromoform		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Isopropylbenzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,1,2,2-Tetrachloroethane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Triangular Parcel Initial Investigation								Triangular Parcel Supp. Invest.	
		TP-B04 (2-3) EV13060128-34 06/20/2013	TP-B04B (11.5-13) EV13060128-35 06/20/2013	TP-B06 (13.5-14) EV13060128-36 06/20/2013	TP-B07 (14-15) EV13060128-40 06/21/2013	TP-B08 (7-8) EV13060128-44 06/21/2013	TP-B08 (16-17.5) EV13060128-43 06/21/2013	TP-B09 (6-7) EV13060128-42 06/21/2013	TP-B09 (13-14) EV13060128-41 06/21/2013	TP-MW-1-S (13.5-14.5) EV13080134-03 08/19/2013	TP-MW-2-S (14-15) EV13080134-06 08/19/2013
1,2,3-Trichloropropane		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Bromobenzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
N-Propyl Benzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
2-Chlorotoluene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,3,5-Trimethylbenzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
4-Chlorotoluene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
T-Butyl Benzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,2,4-Trimethylbenzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
S-Butyl Benzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
P-Isopropyltoluene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,3-Dichlorobenzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,4-Dichlorobenzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
N-Butylbenzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,2-Dichlorobenzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,2-Dibromo 3-Chloropropane		NA	50 U	NA	50 U	NA	50 U	50 U	50 U	NA	NA
1,2,4-Trichlorobenzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Hexachlorobutadiene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
Naphthalene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
1,2,3-Trichlorobenzene		NA	10 U	NA	10 U	NA	10 U	10 U	10 U	NA	NA
SEMIVOLATILES (µg/kg) Method EPA-8270											
Pyridine		NA	200 U	NA	200 U	NA	200 U	NA	200 U	NA	NA
N-Nitrosodimethylamine		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Phenol		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Aniline		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Bis(2-Chloroethyl)Ether		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
2-Chlorophenol		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
1,3-Dichlorobenzene		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
1,4-Dichlorobenzene		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Benzyl Alcohol		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
1,2-Dichlorobenzene		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
2-Methylphenol		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Bis(2-Chloroisopropyl)Ether		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
3&4-Methylphenol		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
N-Nitroso-Di-N-Propylamine		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Hexachloroethane		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Nitrobenzene		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Isophorone		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
2-Nitrophenol		NA	250 U	NA	250 U	NA	250 U	NA	250 U	NA	NA
2,4-Dimethylphenol		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Benzoic Acid		NA	1000 U	NA	1000 U	NA	1000 U	NA	1000 U	NA	NA
Bis(2-Chloroethoxy)Methane		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
2,4-Dichlorophenol		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
1,2,4-Trichlorobenzene		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
4-Chloroaniline		NA	100 U	NA	110 U	NA	100 U	NA	100 U	NA	NA
2,6-Dichlorophenol		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Hexachlorobutadiene		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
4-Chloro-3-Methylphenol		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Hexachlorocyclopentadiene		NA	500 U	NA	500 U	NA	500 U	NA	500 U	NA	NA
2,4,6-Trichlorophenol		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
2,4,5-Trichlorophenol		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
2-Chloronaphthalene		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
2-Nitroaniline		NA	250 U	NA	250 U	NA	250 U	NA	250 U	NA	NA
Dimethylphthalate		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
2,6-Dinitrotoluene		NA	250 U	NA	250 U	NA	250 U	NA	250 U	NA	NA
3-Nitroaniline		NA	250 U	NA	250 U	NA	250 U	NA	250 U	NA	NA
2,4-Dinitrophenol		NA	250 U	NA	250 U	NA	250 U	NA	250 U	NA	NA
4-Nitrophenol		NA	500 U	NA	500 U	NA	500 U	NA	500 U	NA	NA
Dibenzofuran		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
2,4-Dinitrotoluene		NA	250 U	NA	250 U	NA	250 U	NA	250 U	NA	NA
2,3,4,6-Tetrachlorophenol		NA	250 U	NA	250 U	NA	250 U	NA	250 U	NA	NA
Diethylphthalate		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
4-Chlorophenyl-Phenylether		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
4-Nitroaniline		NA	250 U	NA	250 U	NA	250 U	NA	250 U	NA	NA
4,6-Dinitro-2-Methylphenol		NA	100 U	NA	120 U	NA	100 U	NA	100 U	NA	NA
N-Nitrosodiphenylamine		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Azobenzene		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
4-Bromophenyl-Phenylether		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA

**TABLE A-6
SOIL ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses	Triangular Parcel Initial Investigation								Triangular Parcel Supp. Invest.	
		TP-B04 (2-3) EV13060128-34 06/20/2013	TP-B04B (11.5-13) EV13060128-35 06/20/2013	TP-B06 (13.5-14) EV13060128-36 06/20/2013	TP-B07 (14-15) EV13060128-40 06/21/2013	TP-B08 (7-8) EV13060128-44 06/21/2013	TP-B08 (16-17.5) EV13060128-43 06/21/2013	TP-B09 (6-7) EV13060128-42 06/21/2013	TP-B09 (13-14) EV13060128-41 06/21/2013	TP-MW-1-S (13.5-14.5) EV13080134-03 08/19/2013	TP-MW-2-S (14-15) EV13080134-06 08/19/2013
Hexachlorobenzene		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
Pentachlorophenol		NA	500 U	NA	500 U	NA	500 U	NA	500 U	NA	NA
Carbazole		NA	100 U	NA	110 U	NA	100 U	NA	100 U	NA	NA
Di-N-Butylphthalate		NA	130 U	NA	130 U	NA	130 U	NA	130 U	NA	NA
Butylbenzylphthalate		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
3,3-Dichlorobenzidine		NA	250 U	NA	270 U	NA	250 U	NA	250 U	NA	NA
Bis(2-Ethylhexyl)Phthalate		NA	130 U	NA	130 U	NA	130 U	NA	130 U	NA	NA
Di-N-Octylphthalate		NA	100 U	NA	100 U	NA	100 U	NA	100 U	NA	NA
PAHs (mg/kg) Method EPA-8270 SIM											
Naphthalene		NA	0.010 U	NA	0.059	NA	0.021	NA	0.070	NA	NA
2-Methylnaphthalene		NA	0.010 U	NA	0.010 U	NA	0.010 U	NA	0.012	NA	NA
1-Methylnaphthalene		NA	0.010 U	NA	0.010 U	NA	0.010 U	NA	0.011	NA	NA
Total Naphthalenes	5 (b)	NA	0.010 U	NA	0.059	NA	0.021	NA	0.093	NA	NA
Acenaphthylene		NA	0.010 U	NA	0.025	NA	0.010 U	NA	0.032	NA	NA
Acenaphthene		NA	0.010 U	NA	0.010 U	NA	0.010 U	NA	0.010 U	NA	NA
Fluorene		NA	0.010 U	NA	0.010 U	NA	0.010 U	NA	0.010 U	NA	NA
Phenanthrene		NA	0.010 U	NA	0.031	NA	0.013	NA	0.040	NA	NA
Anthracene		NA	0.010 U	NA	0.010 U	NA	0.010 U	NA	0.010 U	NA	NA
Fluoranthene		NA	0.010 U	NA	0.045	NA	0.010	NA	0.028	NA	NA
Pyrene		NA	0.010 U	NA	0.051	NA	0.012	NA	0.030	NA	NA
Benzo[A]Anthracene		NA	0.010 U	NA	0.020	NA	0.010 U	NA	0.010 U	NA	NA
Chrysene		NA	0.010 U	NA	0.018	NA	0.010 U	NA	0.010 U	NA	NA
Benzo[B]Fluoranthene		NA	0.010 U	NA	0.016	NA	0.010 U	NA	0.010 U	NA	NA
Benzo[K]Fluoranthene		NA	0.010 U	NA	0.015	NA	0.010 U	NA	0.010 U	NA	NA
Benzo[A]Pyrene		NA	0.010 U	NA	0.022	NA	0.010 U	NA	0.010 U	NA	NA
Indeno[1,2,3-Cd]Pyrene		NA	0.010 U	NA	0.016	NA	0.010 U	NA	0.010 U	NA	NA
Dibenzo[A,H]Anthracene		NA	0.010 U	NA	0.010 U	NA	0.010 U	NA	0.010 U	NA	NA
Benzo[G,H,I]Perylene		NA	0.010 U	NA	0.018	NA	0.010 U	NA	0.010 U	NA	NA
cPAH TEQ	0.1	NA	ND	NA	0.029	NA	ND	NA	ND	NA	NA
PCBs (mg/kg) Method EPA-8082											
PCB-1016		NA	0.10 U	NA	NA	NA	0.10 U	NA	0.10 U	NA	NA
PCB-1268		NA	0.10 U	NA	NA	NA	0.10 U	NA	0.10 U	NA	NA
PCB-1221		NA	0.10 U	NA	NA	NA	0.10 U	NA	0.10 U	NA	NA
PCB-1232		NA	0.10 U	NA	NA	NA	0.10 U	NA	0.10 U	NA	NA
PCB-1242		NA	0.10 U	NA	NA	NA	0.10 U	NA	0.10 U	NA	NA
PCB-1248		NA	0.10 U	NA	NA	NA	0.10 U	NA	0.10 U	NA	NA
PCB-1254		NA	0.10 U	NA	NA	NA	0.10 U	NA	0.10 U	NA	NA
PCB-1260		NA	0.10 U	NA	NA	NA	0.10 U	NA	0.10 U	NA	NA
Total PCBs	1	NA	0.10 U	NA	NA	NA	0.10 U	NA	0.10 U	NA	NA
CONVENTIONALS											
Total Organic Carbon (%) (EPA-9060)		NA	1.9	1.6	NA	NA	NA	NA	4.2	NA	NA
pH (SU) (EPA-9045)		NA	NA	NA	NA	NA	NA	NA	6.29	NA	NA
Percent Solids (%) (EPA-160.3)		NA	92.0	61.4	NA	NA	NA	NA	71.4	NA	NA

(a) = Value is used when benzene is not present.
 (b) = Value if for the total of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene.
 (c) = Value is for total xylenes.
 U = Indicates the compound was not detected at the reported concentration.
 J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
 NA = Not analyzed.
 ND = Not detected.
 Bold = Exceedance of Cleanup/Screening Level.

**TABLE A-7
GROUNDWATER ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth: Lab ID: Date Collected:	Screening Levels		Former Plywood Plant Parcels Initial Investigation											
	MTCA Method A Cleanup Levels for Groundwater	Minimum Screening Level (Groundwater as Drinking Water) Unless Otherwise Indicated	FPP-B01 17 EV13060128-53 06/18/2013	FPP-B02 19 EV13060104-04 06/19/2013	FPP-B03 17 EV13060128-60 06/18/2013	FPP-B04 15 EV13060128-56 06/18/2013	FPP-B05 18 EV13060104-07 06/19/2013	FPP-B07 17 EV13060104-06 06/19/2013	FPP-B08 17 EV13060128-52 06/18/2013	FPP-B09 18 EV13060104-05 06/19/2013	FPP-B11 18 EV13060128-55 06/18/2013	FPP-B12 18 EV13060104-03 06/17/2013	FPP-B13 13 EV13060104-02 06/17/2013	FPP-B15 18 EV13060104-01 06/17/2013
DISSOLVED METALS (µg/L) EPA Methods 200.8/7196/7470														
Arsenic (a)	5	0.15 (c)	1.0 U	1.0 U	1.0 U	1.4	1.0 U	1.0 U	1.1	1.0	1.3	1.5	NA	1.0 U
Cadmium	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U
Chromium	50		2.0 U	2.0 U	2.0 U	2.0 U	2.6	2.0 U	NA	2.0 U				
Chromium (VI)		48	NA	10 U	NA	NA	10 U	NA	NA	10 U	NA	NA	NA	NA
Iron		300	50 U	80	50 U	4900	3800	5200	430	4300	76	9500	NA	71
Lead	15	15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U
Manganese		50	830	1300	1900	2000	2700	1800	1300	3500	1600	1600	NA	420
Mercury	2		0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U
Sodium		20,000	13,000	14,000	19,000	79,000	59,000	22,000	43,000	41,000	23,000	41,000	NA	18,000
TOTAL METALS (µg/L) EPA Methods 200.8/7196/7470														
Arsenic (a)	5	0.15 (c)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.5	NA
Cadmium	5	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	NA
Chromium	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	NA
Chromium (VI)		48	NA	10 U	NA	NA	10 U	NA	NA	10 U	NA	NA	NA	NA
Iron		300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13,000	NA
Lead	15	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.8	NA
Manganese		50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1700	NA
Mercury	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.20 U	NA
Sodium		20,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	150,000	NA
TOTAL PETROLEUM HYDROCARBONS (µg/L) NWTPH-DX														
TPH-Diesel Range	500		130 U	130 U	130 U	1700	620 U	130 U						
TPH-Oil Range	500		250 U	250 U	250 U	5000	7500	250 U	600	250 U				
NWTPH-GX														
TPH-Gasoline Range	1000 (b)		50 U	50 U	NA	50 U	51	50 U	50 U	50 U	NA	NA	50 U	NA
VOLATILES (µg/L) Method EPA-8260														
Dichlorodifluoromethane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Chloromethane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Bromomethane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Chloroethane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Carbon Tetrachloride			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Trichlorofluoromethane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Carbon Disulfide			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Acetone			25 U	25 U	NA	25 U	NA	NA	25 U	NA				
1,1-Dichloroethene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Methylene Chloride	5		5.0 U	5.0 U	NA	5.0 U	NA	NA	5.0 U	NA				
Acrylonitrile			10 U	10 U	NA	10 U	NA	NA	10 U	NA				
Methyl T-Butyl Ether			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Trans-1,2-Dichloroethene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,1-Dichloroethane	5		2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2-Butanone			10 U	10 U	NA	10 U	NA	NA	10 U	NA				
Cis-1,2-Dichloroethene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2,2-Dichloropropane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Bromochloromethane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Chloroform		80	3.3	2.8	NA	2.0 U	NA	NA	2.0 U	NA				
1,1,1-Trichloroethane	200		2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,1-Dichloropropene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,2-Dichloroethane	5		2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Benzene	5		2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,2-Dichloropropane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Dibromomethane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Bromodichloromethane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Trans-1,3-Dichloropropene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
4-Methyl-2-Pentanone			10 U	10 U	NA	10 U	NA	NA	10 U	NA				

TABLE A-7
GROUNDWATER ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON

Location: Depth: Lab ID: Date Collected:	Screening Levels		Former Plywood Plant Parcels Initial Investigation											
	MTCA Method A Cleanup Levels for Groundwater	Minimum Screening Level (Groundwater as Drinking Water) Unless Otherwise Indicated	FPP-B01 17 EV13060128-53 06/18/2013	FPP-B02 19 EV13060104-04 06/19/2013	FPP-B03 17 EV13060128-60 06/18/2013	FPP-B04 15 EV13060128-56 06/18/2013	FPP-B05 18 EV13060104-07 06/19/2013	FPP-B07 17 EV13060104-06 06/19/2013	FPP-B08 17 EV13060128-52 06/18/2013	FPP-B09 18 EV13060104-05 06/19/2013	FPP-B11 18 EV13060128-55 06/18/2013	FPP-B12 18 EV13060104-03 06/17/2013	FPP-B13 13 EV13060104-02 06/17/2013	FPP-B15 18 EV13060104-01 06/17/2013
Toluene	1000		2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Cis-1,3-Dichloropropene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,1,2-Trichloroethane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2-Hexanone			10 U	10 U	NA	10 U	NA	NA	10 U	NA				
1,3-Dichloropropane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Tetrachloroethylene	5		2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Dibromochloromethane	10		2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,2-Dibromoethane	0.01		0.010 U	0.010 U	NA	0.010 U	NA	NA	0.010 U	NA				
Chlorobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,1,1,2-Tetrachloroethane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Ethylbenzene	700		2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
m,p-Xylene	1000 (d)		4.0 U	4.0 U	NA	4.0 U	NA	NA	4.0 U	NA				
Styrene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
o-Xylene	1000 (d)		2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Bromoform			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Isopropylbenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,1,1,2,2-Tetrachloroethane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,2,3-Trichloropropane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Bromobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
N-Propyl Benzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2-Chlorotoluene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,3,5-Trimethylbenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
4-Chlorotoluene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
T-Butyl Benzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,2,4-Trimethylbenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
S-Butyl Benzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
P-Isopropyltoluene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,3 Dichlorobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,4-Dichlorobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
N-Butylbenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,2-Dichlorobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,2-Dibromo 3-Chloropropane			10 U	10 U	NA	10 U	NA	NA	10 U	NA				
1,2,4-Trichlorobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Hexachlorobutadiene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Naphthalene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,2,3-Trichlorobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
VOLATILES (µg/L)														
Method EPA-8260 SIM														
Vinyl Chloride	0.2		0.020 U	0.020 U	NA	0.020 U	NA	NA	0.020 U	NA				
Trichloroethene	5	0.5	0.020 U	0.020 U	NA	0.020 U	NA	NA	0.020 U	NA				
SEMIVOLATILES (µg/L)														
Method EPA-8270														
Pyridine			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
N-Nitrosodimethylamine			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Phenol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Aniline			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Bis(2-Chloroethyl)Ether			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2-Chlorophenol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,3-Dichlorobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,4-Dichlorobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Benzyl Alcohol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,2-Dichlorobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2-Methylphenol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Bis(2-Chloroisopropyl)Ether			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
3&4-Methylphenol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
N-Nitroso-Di-N-Propylamine			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Hexachloroethane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Nitrobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Isophorone			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2-Nitrophenol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2,4-Dimethylphenol		160	2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				

**TABLE A-7
GROUNDWATER ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Table A-7 - GW Analytical Results, Former Plywood Plant and Triangular Parcels

Location: Depth: Lab ID: Date Collected:	Screening Levels		Former Plywood Plant Parcels Initial Investigation											
	MTCA Method A Cleanup Levels for Groundwater	Minimum Screening Level (Groundwater as Drinking Water) Unless Otherwise Indicated	FPP-B01 17 EV13060128-53 06/18/2013	FPP-B02 19 EV13060104-04 06/19/2013	FPP-B03 17 EV13060128-60 06/18/2013	FPP-B04 15 EV13060128-56 06/18/2013	FPP-B05 18 EV13060104-07 06/19/2013	FPP-B07 17 EV13060104-06 06/19/2013	FPP-B08 17 EV13060128-52 06/18/2013	FPP-B09 18 EV13060104-05 06/19/2013	FPP-B11 18 EV13060128-55 06/18/2013	FPP-B12 18 EV13060104-03 06/17/2013	FPP-B13 13 EV13060104-02 06/17/2013	FPP-B15 18 EV13060104-01 06/17/2013
Benzoic Acid			10 U	10 U	NA	10 U	NA	NA	10 U	NA				
Bis(2-Chloroethoxy)Methane			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2,4-Dichlorophenol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1,2,4-Trichlorobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Naphthalene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
4-Chloroaniline			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2,6-Dichlorophenol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Hexachlorobutadiene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
4-Chloro-3-Methylphenol			2.0 UJ	2.0 UJ	NA	2.0 UJ	NA	NA	2.0 UJ	NA				
2-Methylnaphthalene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
1-Methylnaphthalene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Hexachlorocyclopentadiene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2,4,6-Trichlorophenol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2,4,5-Trichlorophenol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2-Chloronaphthalene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2-Nitroaniline			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Acenaphthylene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Dimethylphthalate			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2,6-Dinitrotoluene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Acenaphthene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
3-Nitroaniline			5.0 U	5.0 U	NA	5.0 U	NA	NA	5.0 U	NA				
2,4-Dinitrophenol			10 U	10 U	NA	10 U	NA	NA	10 U	NA				
4-Nitrophenol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Dibenzofuran			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2,4-Dinitrotoluene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
2,3,4,6-Tetrachlorophenol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Diethylphthalate			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Fluorene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
4-Chlorophenyl-Phenylether			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
4-Nitroaniline			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
4,6-Dinitro-2-Methylphenol			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
N-Nitrosodiphenylamine			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Azobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
4-Bromophenyl-Phenylether			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Hexachlorobenzene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Pentachlorophenol			5.0 U	5.0 U	NA	5.0 U	NA	NA	5.0 U	NA				
Phenanthrene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Anthracene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Carbazole			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Di-N-Butylphthalate			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Fluoranthene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Pyrene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Butylbenzylphthalate			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
3,3-Dichlorobenzidine			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Benzo[A]Anthracene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Chrysene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Bis(2-Ethylhexyl)Phthalate		6.0	2.0 U	2.0 U	NA	2.0 U	5.5	2.0 U	2.0 U	2.1	NA	NA	2.0 U	NA
Di-N-Octylphthalate			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Benzo[B]Fluoranthene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Benzo[K]Fluoranthene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Benzo[A]Pyrene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Indeno[1,2,3-Cd]Pyrene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Dibenz[A,H]Anthracene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				
Benzo[G,H,I]Perylene			2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	NA				

**TABLE A-7
GROUNDWATER ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth: Lab ID: Date Collected:	Screening Levels		Former Plywood Plant Parcels Initial Investigation											
	MTCA Method A Cleanup Levels for Groundwater	Minimum Screening Level (Groundwater as Drinking Water) Unless Otherwise Indicated	FPP-B01 17 EV13060128-53 06/18/2013	FPP-B02 19 EV13060104-04 06/19/2013	FPP-B03 17 EV13060128-60 06/18/2013	FPP-B04 15 EV13060128-56 06/18/2013	FPP-B05 18 EV13060104-07 06/19/2013	FPP-B07 17 EV13060104-06 06/19/2013	FPP-B08 17 EV13060128-52 06/18/2013	FPP-B09 18 EV13060104-05 06/19/2013	FPP-B11 18 EV13060128-55 06/18/2013	FPP-B12 18 EV13060104-03 06/17/2013	FPP-B13 13 EV13060104-02 06/17/2013	FPP-B15 18 EV13060104-01 06/17/2013
PAHs (µg/L) Method EPA-8270 SIM														
Naphthalene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Naphthalenes			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[A]Anthracene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[B]Fluoranthene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[K]Fluoranthene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[A]Pyrene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-Cd]Pyrene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz[A,H]Anthracene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[G,H,I]Perylene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cPAH TEQ			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (µg/L) Method EPA-8082														
PCB-1016			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1268			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1221			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1232			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1242			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CONVENTIONALS (mg/L)														
Total Dissolved Solids (SM2540C)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (SM5310C)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FIELD PARAMETERS														
pH		6.5-8.5	6.49	5.73	6.78	6.30	6.00	5.86	6.03	6.71	6.13	5.79	6.15	6.76

**TABLE A-7
GROUNDWATER ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth: Lab ID: Date Collected:	Screening Levels		Former Plywood Plant Parcels Initial Investigation						Former Plywood Plant Parcels Supplemental Investigation					
	MTCA Method A Cleanup Levels for Groundwater	Minimum Screening Level (Groundwater as Drinking Water) Unless Otherwise Indicated	FPP-B17 17 EV13060128-58 06/21/2013	FPP-B19 17 EV13060128-49 06/19/2013	FPP-B20 11 EV13060128-51 06/20/2013	FPP-B24 16 EV13060128-50 06/20/2013	MW-9A-01 EV13060119-02 06/20/2013	MW-12-01 EV13060119-01 06/20/2013	FPP-B25 18.5 EV13080134-64 08/21/2013	FPP-B26 19.5 EV13080134-63 08/21/2013	FPP-B27 16 EV13080134-62 08/21/2013	FPP-B28 19 EV13080134-72 08/23/2013	FPP-B29b 19 EV13080134-73 08/23/2013	FPP-B31 19 EV13080134-66 08/22/2013
DISSOLVED METALS (µg/L) EPA Methods 200.8/7196/7470														
Arsenic (a)	5	0.15 (c)	1.0 U	NA	2.7	1.0 U	1.0	1.3	1.0 U	1.1	35	1.0 U	3.6	1.9
Cadmium	5	5	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
Chromium	50		2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U	2.0 U
Chromium (VI)		48	NA	NA	NA	NA	10 U	10 U	NA	NA	NA	NA	NA	NA
Iron		300	1200	NA	21,000	84	50 U	16,000	9700	18,000	580	24,000	23,000	14,000
Lead	15	15	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	9.2	1.0 U	1.0 U	1.0 U
Manganese		50	1800	NA	4700	700	2.1	2400	1100	1600	90	2300	6100	1600
Mercury	2		0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Sodium		20,000	47,000	NA	130,000	53,000	11,000	45,000	18,000	23,000	1,500,000	68,000	110,000	20,000
TOTAL METALS (µg/L) EPA Methods 200.8/7196/7470														
Arsenic (a)	5	0.15 (c)	NA	NA	NA	NA	1.0	1.3	NA	NA	NA	NA	NA	NA
Cadmium	5	5	NA	NA	NA	NA	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA
Chromium	50		NA	NA	NA	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Chromium (VI)		48	NA	NA	NA	NA	10 U	10 U	NA	NA	NA	NA	NA	NA
Iron		300	NA	NA	NA	NA	50 U	18,000	NA	NA	NA	NA	NA	NA
Lead	15	15	NA	NA	NA	NA	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA
Manganese		50	NA	NA	NA	NA	2.0 U	2200	NA	NA	NA	NA	NA	NA
Mercury	2		NA	NA	NA	NA	0.20 U	0.20 U	NA	NA	NA	NA	NA	NA
Sodium		20,000	NA	NA	NA	NA	11,000	45,000	NA	NA	NA	NA	NA	NA
TOTAL PETROLEUM HYDROCARBONS (µg/L) NWTPH-DX														
TPH-Diesel Range	500		130 U	NA	130 U	130 U	130 U	130 U	130 U	150	1300 U	470	2000 J	130 U
TPH-Oil Range	500		650	NA	250 U	760	250 U	250 U	250 U	270	47,000	470	1900	250 U
NWTPH-GX														
TPH-Gasoline Range	1000 (b)		50 U	50 U	50 U	50 U	50 U	50 U	NA	NA	NA	NA	NA	NA
VOLATILES (µg/L) Method EPA-8260														
Dichlorodifluoromethane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Chloromethane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Bromomethane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Chloroethane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Carbon Disulfide			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Acetone			25 U	25 U	25 U	25 U	25 U	25 U	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Methylene Chloride	5		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA
Acrylonitrile			10 U	10 U	10 U	10 U	10 U	10 U	NA	NA	NA	NA	NA	NA
Methyl T-Butyl Ether			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Trans-1,2-Dichloroethene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	5		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
2-Butanone			10 U	10 U	10 U	10 U	10 U	10 U	NA	NA	NA	NA	NA	NA
Cis-1,2-Dichloroethene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Bromochloromethane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Chloroform		80	2.0 U	2.0 U	2.0 U	2.0 U	3.9	2.0 U	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	200		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	5		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Benzene	5		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Dibromomethane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Bromodichloromethane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone			10 U	10 U	10 U	10 U	10 U	10 U	NA	NA	NA	NA	NA	NA

**TABLE A-7
GROUNDWATER ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth: Lab ID: Date Collected:	Screening Levels		Former Plywood Plant Parcels Initial Investigation						Former Plywood Plant Parcels Supplemental Investigation					
	MTCA Method A Cleanup Levels for Groundwater	Minimum Screening Level (Groundwater as Drinking Water) Unless Otherwise Indicated	FPP-B17 17 EV13060128-58 06/21/2013	FPP-B19 17 EV13060128-49 06/19/2013	FPP-B20 11 EV13060128-51 06/20/2013	FPP-B24 16 EV13060128-50 06/20/2013	MW-9A-01 EV13060119-02 06/20/2013	MW-12-01 EV13060119-01 06/20/2013	FPP-B25 18.5 EV13080134-64 08/21/2013	FPP-B26 19.5 EV13080134-63 08/21/2013	FPP-B27 16 EV13080134-62 08/21/2013	FPP-B28 19 EV13080134-72 08/23/2013	FPP-B29b 19 EV13080134-73 08/23/2013	FPP-B31 19 EV13080134-66 08/22/2013
Toluene	1000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,1,2-Trichloroethane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
2-Hexanone			10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	NA	NA	NA	NA
1,3-Dichloropropane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Tetrachloroethylene	5		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Dibromochloromethane	10		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.01		0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	NA	NA	NA	NA	NA
Chlorobenzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Ethylbenzene	700		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
m,p-Xylene	1000 (d)		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	NA	NA
Styrene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
o-Xylene	1000 (d)		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Bromoform			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Isopropylbenzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,2,3-Trichloropropane			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Bromobenzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
N-Propyl Benzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
2-Chlorotoluene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
4-Chlorotoluene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
T-Butyl Benzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
S-Butyl Benzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
P-Isopropyltoluene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,3 Dichlorobenzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,4-Dichlorobenzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
N-Butylbenzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,2-Dichlorobenzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,2-Dibromo 3-Chloropropane			10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Hexachlorobutadiene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Naphthalene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
VOLATILES (µg/L)														
Method EPA-8260 SIM														
Vinyl Chloride	0.2		0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	NA	NA	NA	NA	NA
Trichloroethene	5	0.5	0.020 U	0.020 U	0.020 U	0.020 U	1.2	1.9	1.9	NA	NA	NA	NA	NA
SEMIVOLATILES (µg/L)														
Method EPA-8270														
Pyridine			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
N-Nitrosodimethylamine			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Phenol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Aniline			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Bis(2-Chloroethyl)Ether			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
2-Chlorophenol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,3-Dichlorobenzene			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,4-Dichlorobenzene			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Benzyl Alcohol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
1,2-Dichlorobenzene			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
2-Methylphenol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Bis(2-Chloroisopropyl)Ether			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
3&4-Methylphenol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Hexachloroethane			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Nitrobenzene			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
Isophorone			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
2-Nitrophenol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA
2,4-Dimethylphenol		160	2.0 U	NA	2.0 U	8.1	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA

**TABLE A-7
GROUNDWATER ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth: Lab ID: Date Collected:	Screening Levels		Former Plywood Plant Parcels Initial Investigation						Former Plywood Plant Parcels Supplemental Investigation					
	MTCA Method A Cleanup Levels for Groundwater	Minimum Screening Level (Groundwater as Drinking Water) Unless Otherwise Indicated	FPP-B17 17 EV13060128-58 06/21/2013	FPP-B19 17 EV13060128-49 06/19/2013	FPP-B20 11 EV13060128-51 06/20/2013	FPP-B24 16 EV13060128-50 06/20/2013	MW-9A-01 EV13060119-02 06/20/2013	MW-12-01 EV13060119-01 06/20/2013	FPP-B25 18.5 EV13080134-64 08/21/2013	FPP-B26 19.5 EV13080134-63 08/21/2013	FPP-B27 16 EV13080134-62 08/21/2013	FPP-B28 19 EV13080134-72 08/23/2013	FPP-B29b 19 EV13080134-73 08/23/2013	FPP-B31 19 EV13080134-66 08/22/2013
Benzoic Acid			10 U	NA	10 U	10 U	10 U	10 U	NA	NA	NA	NA	NA	NA
Bis(2-Chloroethoxy)Methane			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Naphthalene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
2,6-Dichlorophenol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
4-Chloro-3-Methylphenol			2.0 UJ	NA	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
2-Nitroaniline			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Acenaphthylene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Acenaphthene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline			5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol			10 U	NA	10 U	10 U	10 U	10 U	NA	NA	NA	NA	NA	NA
4-Nitrophenol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Dibenzofuran			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
2,3,4,6-Tetrachlorophenol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Diethylphthalate			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Fluorene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-Phenylether			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
4-Nitroaniline			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-Methylphenol			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Azobenzene			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
4-Bromophenyl-Phenylether			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Hexachlorobenzene			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Pentachlorophenol			5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA
Phenanthrene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Di-N-Butylphthalate			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Fluoranthene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Benzo[A]Anthracene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)Phthalate		6.0	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Di-N-Octylphthalate			2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA
Benzo[B]Fluoranthene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[K]Fluoranthene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[A]Pyrene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-Cd]Pyrene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz[A,H]Anthracene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[G,H,I]Perylene			2.0 U	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA

**TABLE A-7
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YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth: Lab ID: Date Collected:	Screening Levels		Former Plywood Plant Parcels Initial Investigation						Former Plywood Plant Parcels Supplemental Investigation					
	MTCA Method A Cleanup Levels for Groundwater	Minimum Screening Level (Groundwater as Drinking Water) Unless Otherwise Indicated	FPP-B17 17 EV13060128-58 06/21/2013	FPP-B19 17 EV13060128-49 06/19/2013	FPP-B20 11 EV13060128-51 06/20/2013	FPP-B24 16 EV13060128-50 06/20/2013	MW-9A-01 EV13060119-02 06/20/2013	MW-12-01 EV13060119-01 06/20/2013	FPP-B25 18.5 EV13080134-64 08/21/2013	FPP-B26 19.5 EV13080134-63 08/21/2013	FPP-B27 16 EV13080134-62 08/21/2013	FPP-B28 19 EV13080134-72 08/23/2013	FPP-B29b 19 EV13080134-73 08/23/2013	FPP-B31 19 EV13080134-66 08/22/2013
PAHs (µg/L) Method EPA-8270 SIM														
Naphthalene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Total Naphthalenes			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Acenaphthylene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Acenaphthene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Fluorene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Phenanthrene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Anthracene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Fluoranthene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Pyrene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Benzo[A]Anthracene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Chrysene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Benzo[B]Fluoranthene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Benzo[K]Fluoranthene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Benzo[A]Pyrene			NA	NA	NA	NA	0.029 U	0.029 U	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-Cd]Pyrene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Dibenz[A,H]Anthracene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Benzo[G,H,I]Perylene			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
cPAH TEQ			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
PCBs (µg/L) Method EPA-8082														
PCB-1016			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
PCB-1268			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
PCB-1221			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
PCB-1232			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
PCB-1242			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
PCB-1248			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
PCB-1254			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
PCB-1260			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Total PCBs	0.1		NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
CONVENTIONALS (mg/L)														
Total Dissolved Solids (SM2540C)			NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	NA	NA	NA	NA
Total Organic Carbon (SM5310C)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FIELD PARAMETERS														
pH		6.5-8.5	5.92	6.27	6.79	6.29	6.26	6.23	6.16	6.59	9.65	6.36	6.53	6.29

**TABLE A-7
GROUNDWATER ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth: Lab ID: Date Collected:	Screening Levels		Former Plywood Parcels Supplemental Investigation				Triangular Parcel Initial Investigation					Triangular Parcel Supp. Invest.	
	MTCA Method A Cleanup Levels for Groundwater	Minimum Screening Level (Groundwater as Drinking Water) Unless Otherwise Indicated	FPP-B33 19 EV13080134-67 08/22/2013	FPP-MW-1 EV13080134-71 08/23/2013	FPP-MW-2 EV13080134-69 08/23/2013	FPP-MW-3 EV13080134-70 08/23/2013	TP-B01 19 EV13060128-59 06/21/2013	TP-B04B 18 EV13060119-03 06/20/2013	TP-B06 16 EV13060128-57 06/20/2013	TP-B08 18 EV13060128-54 06/21/2013	TP-B09 18 EV13060128-61 06/21/2013	TP-MW-1 EV13080134-65 08/22/2013	TP-MW-2 EV13080134-68 08/22/2013
DISSOLVED METALS (µg/L) EPA Methods 200.8/7196/7470													
Arsenic (a)	5	0.15 (c)	7.8	5.3	1.6	2.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5
Cadmium	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chromium	50		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chromium (VI)		48	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	NA
Iron		300	24,000	59,000	21,000	330	86	94	770	220	96	50 U	8100
Lead	15	15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Manganese		50	2000	9900	2300	240	72	85	1400	1400	1300	140	1400
Mercury	2		0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Sodium		20,000	48,000	91,000	50,000	100,000	7600	12,000	17,000	17,000	18,000	21,000	24,000
TOTAL METALS (µg/L) EPA Methods 200.8/7196/7470													
Arsenic (a)	5	0.15 (c)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)		48	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	NA
Iron		300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	15	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese		50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium		20,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PETROLEUM HYDROCARBONS (µg/L) NWTPH-DX													
TPH-Diesel Range	500		130 U	480	220	240	130 U	130 U	130 U	130 U	130 U	130 U	130 U
TPH-Oil Range	500		250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
NWTPH-GX													
TPH-Gasoline Range	1000 (b)		NA	50 U	50 U	50 U	50 U	50 U	NA	50 U	50 U	50 U	50 U
VOLATILES (µg/L) Method EPA-8260													
Dichlorodifluoromethane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Disulfide			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Acetone			NA	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U	25 U
1,1-Dichloroethene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Methylene Chloride	5		NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U
Acrylonitrile			NA	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U	10 U
Methyl T-Butyl Ether			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Trans-1,2-Dichloroethene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	5		NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
2-Butanone			NA	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U	10 U
Cis-1,2-Dichloroethene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
2,2-Dichloropropane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Bromochloromethane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform		80	NA	2.0 U	2.0 U	2.0 U	2.7	4.3	NA	2.0 U	2.0 U	2.9	2.0 U
1,1,1-Trichloroethane	200		NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloropropene			NA	2.0 U	2.0 U	2.0 U	U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	5		NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	5		NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloropropane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Trans-1,3-Dichloropropene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-Pentanone			NA	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U	10 U

**TABLE A-7
GROUNDWATER ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth Lab ID: Date Collected:	Screening Levels		Former Plywood Parcels Supplemental Investigation				Triangular Parcel Initial Investigation				Triangular Parcel Supp. Invest.	
	MTCA Method A Cleanup Levels for Groundwater	Minimum Screening Level (Groundwater as Drinking Water) Unless Otherwise Indicated	FPP-B33 19 EV13080134-67 08/22/2013	FPP-MW-1 EV13080134-71 08/23/2013	FPP-MW-2 EV13080134-69 08/23/2013	FPP-MW-3 EV13080134-70 08/23/2013	TP-B01 19 EV13060128-59 06/21/2013	TP-B04B 18 EV13060119-03 06/20/2013	TP-B06 16 EV13060128-57 06/20/2013	TP-B08 18 EV13060128-54 06/21/2013	TP-B09 18 EV13060128-61 06/21/2013	TP-MW-1 EV13080134-65 08/22/2013
Toluene	1000		NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Cis-1,3-Dichloropropene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
2-Hexanone			NA	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
1,3-Dichloropropane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Tetrachloroethylene	5		NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Dibromochloromethane	10		NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,2-Dibromoethane	0.01		NA	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	NA	0.010 U	0.010 U	0.010 U
Chlorobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,1,1,2-Tetrachloroethane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Ethylbenzene	700		NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
m,p-Xylene	1000 (d)		NA	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	NA	4.0 U	4.0 U	4.0 U
Styrene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
o-Xylene	1000 (d)		NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Bromoform			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Isopropylbenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,2,3-Trichloropropane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Bromobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
N-Propyl Benzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
2-Chlorotoluene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
4-Chlorotoluene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
T-Butyl Benzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
S-Butyl Benzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
P-Isopropyltoluene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,3 Dichlorobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
N-Butylbenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,2-Dibromo 3-Chloropropane			NA	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
1,2,4-Trichlorobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Hexachlorobutadiene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Naphthalene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
VOLATILES (µg/L)												
Method EPA-8260 SIM												
Vinyl Chloride	0.2		NA	NA	NA	NA	0.020 U	0.020 U	NA	0.020 U	0.020 U	NA
Trichloroethene	5	0.5	NA	NA	NA	NA	0.020 U	0.020 U	NA	0.020 U	0.020 U	NA
SEMIVOLATILES (µg/L)												
Method EPA-8270												
Pyridine			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
N-Nitrosodimethylamine			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Phenol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Aniline			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Bis(2-Chloroethyl)Ether			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
2-Chlorophenol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Benzyl Alcohol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
2-Methylphenol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Bis(2-Chloroisopropyl)Ether			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
3&4-Methylphenol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
N-Nitroso-Di-N-Propylamine			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Hexachloroethane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Nitrobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
Isophorone			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
2-Nitrophenol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U
2,4-Dimethylphenol		160	NA	2.0 U	2.0 U	2.7	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U

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Benzoic Acid			NA	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U	10 U
Bis(2-Chloroethoxy)Methane			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dichlorophenol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trichlorobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Naphthalene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloroaniline			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
2,6-Dichlorophenol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorobutadiene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloro-3-Methylphenol			NA	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 UJ	NA	2.0 UJ	2.0 UJ	2.0 U	2.0 U
2-Methylnaphthalene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
1-Methylnaphthalene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorocyclopentadiene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
2,4,6-Trichlorophenol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
2,4,5-Trichlorophenol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
2-Chloronaphthalene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
2-Nitroaniline			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Acenaphthylene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Dimethylphthalate			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
2,6-Dinitrotoluene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Acenaphthene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
3-Nitroaniline			NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U
2,4-Dinitrophenol			NA	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U	10 U
4-Nitrophenol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Dibenzofuran			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dinitrotoluene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
2,3,4,6-Tetrachlorophenol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Diethylphthalate			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Fluorene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorophenyl-Phenylether			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
4-Nitroaniline			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
4,6-Dinitro-2-Methylphenol			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodiphenylamine			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Azobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
4-Bromophenyl-Phenylether			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorobenzene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Pentachlorophenol			NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Anthracene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Carbazole			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Di-N-Butylphthalate			NA	2.0 U	2.0 U	4.7	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Fluoranthene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Pyrene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Butylbenzylphthalate			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
3,3-Dichlorobenzidine			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Benzo[A]Anthracene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Chrysene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Bis(2-Ethylhexyl)Phthalate		6.0	NA	4.0 U	2.8 U	13 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Di-N-Octylphthalate			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Benzo[B]Fluoranthene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Benzo[K]Fluoranthene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Benzo[A]Pyrene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Indeno[1,2,3-Cd]Pyrene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Dibenz[A,H]Anthracene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U
Benzo[G,H,I]Perylene			NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.0 U

**TABLE A-7
GROUNDWATER ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location: Depth: Lab ID: Date Collected:	Screening Levels		Former Plywood Parcels Supplemental Investigation				Triangular Parcel Initial Investigation					Triangular Parcel Supp. Invest.		
	MTCA Method A Cleanup Levels for Groundwater	Minimum Screening Level (Groundwater as Drinking Water) Unless Otherwise Indicated	FPP-B33 19 EV13080134-67 08/22/2013	FPP-MW-1 EV13080134-71 08/23/2013	FPP-MW-2 EV13080134-69 08/23/2013	FPP-MW-3 EV13080134-70 08/23/2013	TP-B01 19 EV13060128-59 06/21/2013	TP-B04B 18 EV13060119-03 06/20/2013	TP-B06 16 EV13060128-57 06/20/2013	TP-B08 18 EV13060128-54 06/21/2013	TP-B09 18 EV13060128-61 06/21/2013	TP-MW-1 EV13080134-65 08/22/2013	TP-MW-2 EV13080134-68 08/22/2013	
PAHs (µg/L) Method EPA-8270 SIM														
Naphthalene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylnaphthalene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1-Methylnaphthalene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Total Naphthalenes			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthylene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluorene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Phenanthrene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Anthracene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluoranthene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Pyrene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo[A]Anthracene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo[B]Fluoranthene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo[K]Fluoranthene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo[A]Pyrene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Indeno[1,2,3-Cd]Pyrene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dibenz[A,H]Anthracene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo[G,H,I]Perylene			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
cPAH TEQ			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PCBs (µg/L) Method EPA-8082														
PCB-1016			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PCB-1268			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PCB-1221			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PCB-1232			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PCB-1242			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PCB-1248			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PCB-1254			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PCB-1260			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Total PCBs	0.1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CONVENTIONALS (mg/L)														
Total Dissolved Solids (SM2540C)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Total Organic Carbon (SM5310C)			NA	38	18	17	NA	NA	NA	NA	1.3	3.5		
FIELD PARAMETERS														
pH		6.5-8.5	6.97	6.52	5.90	6.62	6.75	5.49	6.23	5.67	6.22	6.64	6.56	

TABLE A-8
SURFACE WATER ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON

Location:	FPP-SW-01	FPP-SW-02	FPP-SW-03
Lab ID:	EV13060128-62	EV13060128-63	EV13060128-64
Date Collected:	06/20/2013	06/20/2013	06/20/2013
TOTAL PETROLEUM HYDROCARBONS (µg/L)			
NWTPH-HCID			
HCID-Gas Range	130 U	130 U	130 U
HCID-Diesel Range	310 U	310 U	>310
HCID-Oil Range	>310	310 U	>310
FIELD PARAMETERS			
pH	6.32	8.81	7.03

U = Indicates the compound was not detected at the reported concentration.
NA = Not analyzed.

**TABLE A-9
LANDFILL GAS MEASUREMENTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON**

Location	Date Collected	% Oxygen	Methane		CO (ppm)	CO ₂ (2%)	H ₂ S (ppm)
			%LEL	% Vol.			
G-01	6/17/2013	0.0	>>	31.4	0	26.4	1
G-02	6/17/2013	16.1	0	0	1	3.2	0
G-03	6/17/2013	8.4	0	0	22	8.7	1
G-04	6/17/2013	13.4	0	0	32	5.4	1

TABLE A-10
WOOD WASTE ANALYTICAL RESULTS
YAKIMA MILL SITE
FORMER PLYWOOD PLANT AND TRIANGULAR PARCELS
YAKIMA, WASHINGTON

Location:	Wood-1-(1-6)	Wood-1-(6-11)
Lab ID:	K1308586-001	K1308586-002
Date Collected:	08/21/2013	08/21/2013
TCLP METALS (mg/L)		
Method 6010C/7470A		
Arsenic	0.1 U	0.1 U
Barium	1.0 U	1.0 U
Cadmium	0.05 U	0.05 U
Chromium	0.05 U	0.05 U
Lead	0.05 U	0.05 U
Mercury	0.001 U	0.001 U
Selenium	0.1 U	0.1 U
Silver	0.1 U	0.1 U
HIGH HEAT VALUE (BTU/LB)		
Method ASTM D2015		
	5360	4340

U = Indicates the compound was not detected at the reported concentration.

Sampling and Analysis Plan

Appendix B

Sampling and Analysis Plan Supplemental Remedial Investigation Closed City of Yakima Landfill Site Yakima, Washington

September 14, 2015

Prepared for

City of Yakima



**LANDAU
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TABLES

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B-1	Sample Containers, Preservatives, and Holding Times

LIST OF ACRONYMS/ABBREVIATIONS

ASTM	American Society for Testing and Materials
BGS	below ground surface
City	City of Yakima
DAHP	Department of Archaeology and Historic Preservation
Ecology	Washington State Department of Ecology
ft	feet
GPS	global positioning system
HCID	hydrocarbon identification
I-82	Interstate 82
ID	inside diameter
LFG	landfill gas
Mill Site	Former Boise Cascade Mill and Plywood Facility
ml	milliliter
ml/min	milliliter per minute
MSW	municipal solid waste
NTU	nephelometric unit
ORP	oxidation reduction potential
oz	ounce
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PID	photoionization detector
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
RCW	Revised Code of Washington
RI	Remedial Investigation
SL	screening level
SAP	Sampling and Analysis Plan
SIM	selected ion monitoring
Site	Closed City of Yakima Landfill Site
SVOC	semivolatile organic compound
TDS	total dissolved solids
TOC	total organic carbon
TPH-D	diesel-range total petroleum hydrocarbons
TPH-G	gasoline-range total petroleum hydrocarbons
TPH-MN	mineral oil-range total petroleum hydrocarbons
TPH-O	oil-range total petroleum hydrocarbons
USCS	Unified Soil Classification System
VOC	volatile organic compound
WAC	Washington Administrative Code

1.0 INTRODUCTION

This sampling and analysis plan (SAP) describes the procedures used for the field activities conducted during the remedial investigation (RI) at the closed City of Yakima (City) Landfill Site (Site). The Site is located at the southern end of the former Boise Cascade Sawmill and Plywood Facility (Mill Site), at 805 North 7th Street, in Yakima, Washington (Figure B-1). This SAP is an appendix to the *Supplemental RI Report, Closed City of Yakima Landfill Site, Yakima, Washington* (Supplemental RI Report; Landau Associates 2015).

The primary objective of this SAP is to outline sampling and analysis procedures and methodologies used during implementation of the supplemental RI at the Site consistent with accepted procedures such that the data collected is adequate and representative for use in characterizing environmental conditions at the Site. This SAP has been prepared consistent with the requirements of Washington Administrative Code (WAC) 173-340-820. It outlines the field, sampling, and analytical procedures used during the implementation of the supplemental RI program.

Although not identified during the past several years of Site investigation activities, if archaeological resources were to be discovered, work would be stopped immediately and the Washington State Department of Ecology (Ecology), the Department of Archaeology and Historic Preservation (DAHP), the City, and the appropriate Tribes' Cultural Resources Department will be notified by the close of business on the day of discovery. A licensed archaeologist would then inspect the Site and document the discovery, provide a professionally documented site form, and report to the above-listed parties. In the event of an inadvertent discovery of human remains, work would be immediately halted in the discovery area, the remains covered and secured against further disturbance, and the Yakima Police Department and Yakima County Medical Examiner would be immediately contacted, along with the DAHP Physical Anthropologist and authorized Tribal representatives. A treatment plan by a licensed archaeologist would then be developed in consultation with the above-listed parties consistent with Revised Code of Washington (RCW) 27.44 and RCW 27.53 and implemented according to Chapter 25-48 WAC. During completion of the 2014-2015 supplemental RI activities outlined in the draft Work Plan (Landau Associates 2014), no potential archaeological resources were identified during Site field activities.

2.0 FIELD INVESTIGATION PROCEDURES

The following sections describe procedures for field activities included as part of supplemental RI activities at the Site. These activities included soil sampling, groundwater monitoring well installation, groundwater sampling, municipal solid waste (MSW) exploration (e.g., test pitting, drilling, and/or probing), landfill gas (LFG) probe installation, and LFG probe sampling. Field activities were performed in accordance with the Site Health and Safety Plan [provided in Appendix D of the Supplemental RI Report (Landau Associates 2015)].

2.1 UTILITY LOCATE

Prior to the start of the subsurface exploration activities, the “one call” public utility locating service was notified, and a private utility locating service was used, to locate and identify conductible utilities at and within the vicinity of the proposed boring or investigation locations. Attempts were made to locate non-conductible utilities by visual inspection of area storm drains and review of any provided utility maps for the Site, as appropriate. Prior to advancing any borings, a visual survey of the surrounding utilities was conducted; borings or other subsurface explorations were located a minimum of 4 feet (ft) from any marked utility and a minimum of 10 ft from overhead power lines. The final location of the borings and Site subsurface explorations were determined based, in part, on the results of the utility clearance.

2.2 SOIL INVESTIGATION

The completed soil investigation consisted of collecting and analyzing soil samples from soil borings where groundwater monitoring wells and LFG probes were installed, and field screening soil from MSW investigation (e.g., test pit explorations) activities. Proposed soil sampling locations were described in the Work Plan (Landau Associates 2014) and adjusted in the field accordingly in advance of drilling. The location of each soil boring (e.g., groundwater monitoring well and LFG probe location) and MSW exploration (e.g., test pits, etc.) was surveyed using global positioning system (GPS) equipment. Borings completed as groundwater monitoring wells were surveyed by a professional land surveyor to facilitate accurate placement of these features on project figures and drawings, as well as for submittal to Ecology.

2.2.1 BOREHOLE SAMPLING

Boreholes for collecting soil samples and for well installation were drilled using a truck-mounted hollow-stem auger rig. Borings were advanced to below the groundwater table and below the depth of

MSW for locations within the known extent of the former landfill. Boring advancements were completed by a driller licensed in the state of Washington and monitored by a Landau Associates' field representative. Soil conditions observed were described and classified in accordance with the Unified Soil Classification System (USCS).

Borings for installation of groundwater monitoring wells were advanced to a depth that allowed for the top of a 10-ft-long screen¹ to be installed slightly above the groundwater table. However, special consideration were given to boreholes located inside the former landfill footprint where groundwater elevations may have been within the MSW. A step-down process was used at borings inside the former landfill footprint (within the footprint of the known extent of MSW) to limit potential drawdown and migration of contaminants vertically (see Section 2.3.1 for details on construction of wells below MSW).

Upon completion of sampling activities and when a particular boring location was not scheduled for completion as a permanent groundwater monitoring well, the borings were backfilled with hydrated bentonite chips in accordance with applicable regulations (Chapter 173-160 WAC) and the ground surface was patched to be consistent with the surrounding surface (e.g., dirt, gravel, asphalt, or concrete).

A qualified professional logged each soil boring, including the observed physical characteristics of each sample collected (e.g., color, grain size, organic content, etc.) in accordance with USCS procedures; the information was recorded on a boring log form. Log entries include:

- Boring location
- Dates and times of drilling
- Drilling equipment such as type of rig, size of bits, drill rod designations, and sampler types
- Boring dimensions
- Stratigraphy including descriptions of soil according to USCS [ASTM International (ASTM) D 2487] using the visual-manual procedure for describing soils (ASTM D 2488) and including soil composition, density, color, and a qualitative estimate of moisture content
- Sample depths and names
- Depth to groundwater
- Additional sample features including odor, sheen, non-native debris, and organic material, as appropriate
- Other geotechnical data determined in the field, such as blow counts
- Depth to interface of MSW and native soil at boring locations within the former landfill footprint.

Soil samples from hollow-stem auger drilled borings were obtained using a Dames and Moore sampler (3.25 inch outside diameter). In general, samples were collected at 2.5-ft intervals in the upper

¹ 10 ft screens will be used for new groundwater well construction outside of the known extent of MSW; 5 ft screens will be used for new groundwater well construction within the MSW footprint and for LFG probe installation.

10 ft and 5-ft intervals thereafter; however, the ultimate sampling interval was determined based on the stratigraphy and the material encountered (e.g., soil, wood debris, MSW, etc.). Soil retained in the sampler was field-screened for evidence of contamination². Field screening observations included soil staining and discoloration and headspace analysis. Headspace analysis was conducted by placing a representative portion of the soil in a sealable plastic bag, allowing the soil to vaporize inside the sealed container for five (5) minutes, then inserting the photoionization detector (PID) tip into the bag to measure potential total volatile organic compounds (VOCs). Field screening results were recorded in the boring logs, as appropriate.

2.2.2 SOIL LABORATORY ANALYSIS

Samples selected for laboratory analysis were collected from intervals stated in the Work Plan (Landau Associates 2014) following adjustments at the time of drilling, as necessary. Additional samples for analysis were collected from the depth intervals where field-screening indicated the likelihood for potential contamination, as applicable. Soil samples were sent to a laboratory for analysis of constituents stated in the Work Plan (Landau Associates 2014).

Selected soil samples were analyzed for a combination of the following constituents depending on sample locations and matrix availability:

- Petroleum hydrocarbon identification (HCID) by NWTPH-HCID
- Diesel-range petroleum hydrocarbons (TPH-D) and motor oil-range petroleum hydrocarbons (TPH-O) by NWTPH-Dx³
- Gasoline-range petroleum hydrocarbons (TPH-G) by NWTPH-G³
- Polycyclic aromatic hydrocarbons (PAHs) by U.S. Environmental Protection Agency EPA (EPA) SW8720-selected ion monitoring (SIM)
- VOCs by EPA Method SW8260
- Semivolatile organic compounds (SVOCs) by EPA Method SW8270
- Chlorinated pesticides by EPA SW8081
- Polychlorinated biphenyls (PCBs) by EPA Method SW8082
- Total metals (arsenic, barium, cadmium, total chromium, chromium III, iron, lead, manganese, selenium, silver, and sodium) by EPA 6020 series
- Mercury by EPA 7471

² Recovery of actual landfill-materials (e.g., MSW) during the boring process can often be problematic. General visual content of MSW was logged during the boring process, when practicable.

³ The Work Plan assumed that approximately 50 percent of the HCID sample results will require a subsequent follow-on analysis by NWTPH-Dx or NWTPH-G.

- Hexavalent chromium, as needed by EPA 7196⁴
- Anions (fluoride, nitrate, and nitrite) by EPA 300.0
- pH by EPA 9045.

A list of specific chemicals is provided in Table C-5 of the Quality Assurance Project Plan [(QAPP); included in Appendix C of the Supplemental RI Report (Landau Associates 2015)]. The soil sampling strategy is summarized in Table 1 of the Supplemental RI Report which includes the list of chemicals analyzed; corresponding soil screening levels (SLs) are presented in Tables 6 and 7 of the Supplemental RI Report (Landau Associates 2015).

Soil samples collected for analysis of volatile compounds (e.g., VOCs, HCID, TPH-G, TPH-D, or TPH-O) were collected in accordance with EPA Method 5035A. The EPA 5035A soil sampling method is intended to reduce volatilization and biodegradation of samples. The EPA 5035A procedure utilized for soil sample collection during supplemental RI activities is as follows:

- Collected soil “cores” from the split-spoon sampler using an EasyDraw Syringe® coring device. Each “core” consisted of approximately five (5) grams of soil. One EasyDraw Syringe® was used to collect the three discrete “cores”.
- Removed excess soil from the coring device. “Cored” soil from the EasyDraw Syringe® sampling device was placed directly into a preserved 40 milliliter (ml) vial with a stir bar. Vials were preserved as indicated in Table B-1.
- Collected one 2-ounce (oz) soil jar of representative soil with minimal headspace for moisture content and laboratory screening purposes.

Soil samples tested for non-volatile parameters [e.g., metals, SVOCs, and PCBs] were collected from the identified soil sampling interval using the following methods:

- The outside of the soil sampler was scraped to expose a fresh sampling surface using a clean, decontaminated, stainless-steel spoon.
- The soil was homogenized in a decontaminated stainless-steel bowl using a stainless-steel spoon.
- The homogenized soil was transferred into an appropriate laboratory-supplied sample container.

Soil samples collected from monitoring well boreholes for laboratory analysis were labeled using the following format:

“boring location (depth interval) – date (mmddyyyy)”

For example, a soil sample taken at soil boring location 100 at a depth interval of 10 to 11 ft below ground surface (BGS) on September 3, 2014 was labeled “**SB-100 (10-11) – 09032014**”.

⁴ Hexavalent chromium was analyzed during September 2014 only; total chromium results were assessed during subsequent sampling events to determine if additional hexavalent chromium analysis was necessary.

2.3 GROUNDWATER INVESTIGATION

The groundwater investigation consisted of installing ten additional monitoring wells, collecting groundwater samples for laboratory analysis from the new and existing network of monitoring wells, and monitoring groundwater levels site-wide (i.e., existing wells, new wells, and river gauges). The proposed locations for installation of new, permanent monitoring wells were provided in the Work Plan (Landau Associates 2014); final surveyed locations are included on the figures associated with the Supplemental RI Report (Landau Associates 2015). Procedures used for installing and developing the new wells and collecting groundwater samples are described below.

2.3.1 DRILLING AND CONSTRUCTION OF MONITORING WELLS

Boreholes used for the construction of groundwater monitoring wells were drilled using hollow-stem auger drilling equipment. Monitoring wells were constructed by a licensed drilling contractor in the state of Washington, in accordance with the *Minimum Standards for Construction and Maintenance of Wells* (Chapter 173-160 WAC; Ecology 2008). Oversight of drilling and well installation activities was performed by Landau Associates' professionals familiar with environmental sampling and construction of resource protection wells.

Groundwater monitoring wells were constructed of 2-inch diameter, flush treaded, and schedule 40 polyvinyl chloride (PVC) casings. Based on the boring location and intent of investigation, wells were constructed with either a 10-ft or 5-ft screen that intercepts the groundwater table. In general, a 10-ft screen was utilized in areas outside of the extent of MSW; 5-ft screens were used for new groundwater well construction within the footprint of the known extent of MSW. The well screens were constructed of a 0.010-inch machine-slotted casing. A filter pack material consisting of pre-washed, pre-sized number 12/20 silica sand was placed from the bottom of the well to approximately 2 ft above the top of the screen, except in locations drilled through MSW where the filter pack extended 1 ft above the screen.

Filter pack material was placed slowly and carefully to avoid bridging of material. A hydrated bentonite seal was placed above the filter sand pack material to within approximately 4-5 ft of the ground surface. The remaining annulus was filled with concrete to the ground surface to minimize surface water migration to the subsurface. Monitoring wells were completed with above-grade protective monuments. The well casings extend approximately 2.5 ft above the ground surface and a protective steel monument and three bollards (3-inch diameter steel pipes with concrete cores) were set to provide protection for the well. The inside of the protective casing was filled with sand to stabilize the PVC well casing. A locking, water-tight cap was placed on the well and the Ecology identification tag was placed inside the monument.

For groundwater wells constructed within the footprint of the known extent of MSW, a step-down well drilling installation process was used to minimize potential vertical migration and drawdown of contaminants from the MSW to groundwater in underlying soils. Procedures for completing the step-down well installation included:

1. Advancing a large diameter auger [10-inch inside diameter (ID)] to the base of the MSW, installing a temporary steel conductor casing and fill the lower portion of the borehole with several feet of hydrated bentonite chips. The hydrated bentonite was allowed to set for at least one hour.
2. A smaller diameter auger (e.g., 4¼-inch ID) was then advanced inside the first casing to the bottom of the hole and drilling continued until reaching the total boring or well depth.

A 5-ft screen was installed below the MSW zone and within the groundwater table. If the groundwater table elevation provided sufficient room beneath the MSW, the top of the 5-ft screen was placed slightly above the groundwater table interface.

2.3.2 WELL DEVELOPMENT

The monitoring wells were developed after construction to remove formation material from the well borehole and the filter pack prior to groundwater level measurement and sampling. Development was achieved by repeatedly surging and purging the well with a submersible pump (Proactive Environmental Products® Tornado Pump) until the water ran clear; at least five (5) well casing volumes were removed. Development was conducted using a non-dedicated submersible pump. During development, the purged groundwater was monitored for the following field parameters:

- pH
- Specific conductivity
- Temperature
- Dissolved oxygen
- Turbidity.

The wells were developed until the turbidity of the purged groundwater decreased to 5 Nephelometric turbidity units (NTUs), if practicable. If the well dewatered during the initial surging and purging effort, one final well casing volume was removed after the well had fully recharged, if practicable. Well development activities were recorded on well development forms.

2.3.3 GROUNDWATER SAMPLE COLLECTION

Groundwater samples were collected at least 72 hours (3 days) after well development; existing groundwater wells at the Site were not re-developed before supplemental RI sampling commenced. Water levels were measured prior to sample collection (new and existing wells). Collection of

groundwater samples was completed using low-flow sampling techniques with Teflon-lined tubing using the following procedures:

- Immediately following removal of each well cap, the interiors of the well casings were observed for damage, leakage, and staining. Additionally, immediately following removal of the well head cap, any odors detected were recorded and the condition of the well opening was documented. Any damage, leakage, or staining to the well head or well opening was recorded, as appropriate.
- Depth-to-groundwater was measured from the top of casing prior to extraction of water from the well, using the procedures described in Section 2.3.5.
- Prior to sampling, each well was purged using a peristaltic pump attached to a dedicated purge and sample collection tubing. Purging began with a low pumping rate. The pumping rate was maintained at less than 1 liter per minute and with drawdown of less than 1 ft during purging. Purging continued until specific conductivity, pH, temperature, oxidation reduction potential (ORP), turbidity, and dissolved oxygen (field parameters) stabilized.
- Field parameters, including pH, temperature, specific conductivity, dissolved oxygen, and turbidity, were continuously monitored during purging using a flow cell. Purging of the well was considered complete when the field parameters became stable for three successive readings. The successive readings were therefore within +/- 0.1 pH units for pH, +/- 3 percent for conductivity, and +/- 10 percent for dissolved oxygen and turbidity.
- Purge data was recorded on a Groundwater Sample Collection form including purge volume; time of commencement and termination of purging; any observations regarding color, turbidity, or other factors that may be important in evaluation of sample quality; and field measurements of pH, specific conductivity, temperature, dissolved oxygen, and turbidity.
- Following the stabilization of field parameters, the flow cell was disconnected and groundwater samples were collected. Sample data was recorded on a Groundwater Sample Collection form, including sample number and time collected; the observed physical characteristics of the sample (e.g., color, turbidity, etc.); and field parameters (pH, specific conductance, temperature, ORP, dissolved oxygen, and turbidity).
- Problems or significant observations was noted in the “comments” section of the Groundwater Sample Collection form.
- Groundwater samples were collected directly into the appropriate sample containers using a peristaltic pump. To prevent degassing during sampling for VOCs, a pumping rate was maintained below about 100 milliliters per minute (ml/min). The VOC containers were filled completely so that no head space remained. Samples were chilled to 4°C immediately after collection. Clean gloves were worn when collecting each sample.
- Groundwater for dissolved metals analyses was collected last and field-filtered through a 0.45 micron, in-line disposable filter. Dissolved metals samples were preserved, as specified in Table B-1. A note was made on the sample label, sample collection form, and chain-of-custody to indicate the sample had been field filtered and preserved, including the type of preservative used.

Groundwater samples collected from monitoring wells for laboratory analysis were labeled using the following format:

“Location – date (ddmmyy)”

For example a groundwater sample taken at monitoring well location 100 on September 3, 2014 was labeled “MW-100-090314”.

2.3.4 GROUNDWATER LABORATORY ANALYSIS

Groundwater samples were analyzed for a combination of VOCs, SVOCs, PAHs, chlorinated pesticides, PCBs, total and dissolved metals, conventional parameters (e.g., nitrate, nitrite, fluoride, alkalinity, bicarbonate, sulfate, chloride and ammonia), total organic carbon (TOC), total dissolved solids (TDS), and HCID with potential TPH-G and TPH-Dx follow-up analyses, depending on the location being sampled. The list of specific metals to be analyzed for included arsenic, barium, cadmium, total chromium, chromium III, hexavalent chromium (based on the total chromium results⁵), iron, lead, manganese, mercury, selenium, silver, potassium and sodium; select samples will also be analyzed for calcium and magnesium⁶.

Selected groundwater samples may be analyzed for the following:

- Petroleum hydrocarbon identification by NWTPH-HCID
- TPH-D and TPH-O by NWTPH-Dx⁷, both with and without silica gel cleanup
- Gasoline-range petroleum hydrocarbons by NWTPH-G⁵
- PAHs by EPA SW8270-SIM
- VOCs by EPA Method SW8260-SIM/SW8260
- SVOCs by EPA Method SW8270
- Chlorinated pesticides by EPA SW8081
- PCBs by EPA Method SW8082
- Total and dissolved metals (arsenic, barium, cadmium, calcium, total chromium, chromium III, iron, potassium, lead, magnesium, manganese, selenium, silver, and sodium) by EPA 200.8 series
- Total and dissolved mercury by EPA 7470
- Total and dissolved hexavalent chromium, as needed, by EPA 7196⁶
- Chloride, fluoride, nitrate, nitrite, and sulfate by EPA 300.0
- Alkalinity and bicarbonate by SM2320B
- Ammonia by EPA 350.1

⁵ Hexavalent chromium was analyzed during the September 2014 sampling round only; total chromium results were assessed during subsequent sampling events to determine if additional hexavalent chromium analysis was necessary.

⁶ Landfill indicator suite metals per WAC 173-350-500.

⁷ The Work Plan assumed that approximately 50 percent of the HCID sample results would require a subsequent follow-on analysis by NWTPH-Dx or NWTPH-G.

- TOC by SM5310C
- TDS by SM2540C

A list of specific chemicals is provided in Table C-6 of the QAPP [included in Appendix C of the Supplemental RI Report (Landau Associates 2015)]. The sampling strategy is summarized in Tables 3A through 3D of the Supplemental RI Report, and the list of chemicals to be analyzed and their corresponding SLs are included in Tables 4 through 6 of the Supplemental RI Report.

2.3.5 GROUNDWATER FLOW MONITORING

To evaluate groundwater flow direction, depth to groundwater was measured site-wide during each sampling event, including upgradient groundwater well locations (i.e., MW-1, MW-5, and MW-10); groundwater wells MW-3 and MW-4 were not identified during supplemental RI activities and are assumed to be buried under debris and/or destroyed. Water levels were also recorded at the four river gauges (i.e., RG-1 through RG-4), when accessible; river gauge data was not used as part of the groundwater contouring presented in the Supplemental RI Report.

Water levels were measured using an electronic water level indicator and were recorded to the nearest 0.01 ft. Measurements were taken from the top of the well casing. Measurements were collected from the entire network scheduled for sampling and the three upgradient well locations as close in time to one another as practicable, prior to beginning sample collection.

2.4 MUNICIPAL SOLID WASTE EXTENT INVESTIGATION

The lateral extent of the landfill footprint was further quantified and confirmed by completing additional subsurface exploration (e.g., test pit explorations) along the north and east sides of the landfill area. Test pits were excavated using a backhoe or excavator. Soil at each test pit location was removed in 1-ft lifts and each lift stockpiled separately along the side of the test pit. At each test pit, a record of the soil and groundwater (as applicable) conditions observed in the excavation was recorded on a Log of Exploration Form. The soil lithology was classified at each test pit in accordance with the USCS. No soil samples from the test pits were collected for laboratory analysis.

Test pits were excavated near the suspected perimeter of the landfill footprint (roughly 150 ft apart from one another) to a maximum depth of 12 ft BGS or until MSW was visually identified in excavated material, whichever occurred first. If MSW was not initially encountered, the test pit was extended laterally toward the center of the MSW area until the lateral extent of MSW was identified. If MSW was initially encountered, the test pit was extended laterally away from the center of the MSW area until the lateral extent of MSW was identified. Soil was placed back into each test pit in approximately the same layer in which it was removed, to the greatest extent possible.

2.5 LANDFILL GAS INVESTIGATION

Installation and sampling of additional LFG probes was implemented along the perimeter of the known extent of MSW after the MSW investigation discussed in Section 2.4 (i.e., test pit exploration, etc.) was completed and the visual confirmation of the former landfill's perimeter was complete.

2.5.1 LANDFILL GAS PROBE INSTALLATION

Eight borings for LFG probe installation were advanced using a truck-mounted, hollow-stem auger drilling rig by a Washington state licensed driller. Seven LFG probes (GP-23 through, GP-26, and GP-28 through GP-30) were located approximately 15 to 20 ft outside the known extent of MSW, based on the results of the MSW investigation activities and site access constraints. One LFG probe (GP-31) was located within the median for the off-ramp for Interstate 82 (I-82). One soil sample for analytical testing was collected from the soil interval as close as practicable above the groundwater interface at seven of the eight locations. One boring (GP-25) located north of the northern extent of the MSW was completed in wood debris and no sample was collected for chemical analysis.

Borings were advanced to beneath the groundwater interface for geologic logging and soil sampling purposes at all locations except for locations GP-23 and GP-25 where the groundwater interface was deeper than 15 ft BGS. The LFG probes were completed with a 5-ft screen installed from 5 to 10 ft BGS. At two locations (GP-28 and GP-31), groundwater was encountered around 8 ft BGS and the 5-ft screen was installed from 4 to 9 ft BGS. The filter pack surrounding the LFG probe screens consisted of pea gravel to facilitate LFG movement into the probe during purging and monitoring. Probe casings were constructed with 0.5-inch-diameter Schedule 80 PVC pipe. Probe screens were constructed of 0.5-inch-diameter Schedule 80 PVC pipe with 0.03-inch machine slotted perforations. The probes were completed with aboveground stick-ups, lockable steel monuments, and protected by three aboveground bollards.

2.5.2 LANDFILL GAS MEASUREMENTS

LFG measurements were collected during conditions of falling barometric pressure. Prior to collecting the LFG measurements, field personnel purged a minimum of 10 casing volumes of LFG from the probe using a Landtec[®] GEM 2000 plus (or similar) LFG analyzer. During purging, LFG drawn from the probe casings were analyzed for methane, carbon dioxide, carbon monoxide, hydrogen, hydrogen sulfide, oxygen, and balance gases to evaluate for potential impacts from LFG and/or wood debris. Once the probes were purged of 10 times the casing volumes, field personnel recorded readings once the LFG analyzer indicated that readings were stable.

The accuracy of the LFG field analyzer was checked daily and the units were calibrated, as necessary. If the readings were outside of the manufacturer's recommendations, the unit was recalibrated in the field in accordance with the manufacturer's recommended procedures.

3.0 QUALITY ASSURANCE AND QUALITY CONTROL

Analytical samples collected during the supplemental RI followed Quality Assurance/Quality Control (QA/QC) procedures and standards outlined in the QAPP (Appendix C of this Supplemental RI Report). Field QA/QC included collection of quality control samples (e.g., blind field duplicate samples, rinsate blanks, trip blanks). The procedures for collection of the quality control samples are provided in the QAPP [Appendix C of the Supplemental RI Report (Landau Associates 2015)].

3.1 SAMPLE CONTAINERS, PRESERVATION, AND STORAGE

Samples submitted to the analytical laboratory for analysis were collected in the appropriate sample container provided by the analytical laboratory. The samples were preserved by cooling to a temperature between 0-6°C, and as required by the analytical method. Maximum holding and extraction times until analysis was performed were strictly adhered to by field personnel and the analytical laboratory, to the extent possible. Because of issues with timing of sample transport and laboratory dynamics, not all samples were extracted/analyzed within the identified holding time (see the main Supplemental RI Report text for further detail). Sample containers, preservatives, and holding times for the chemicals identified for analysis are presented in Table B-1.

3.2 SAMPLE TRANSPORTATION AND HANDLING

The transportation and handling of samples was accomplished in a manner that not only protected the integrity of the sample, but also prevented detrimental effects due to release of samples. Samples were logged on a chain-of-custody form and kept on ice in secured coolers under the custody of field personnel or an authorized courier until delivery to the analytical laboratory. The chain-of-custody form accompanied each shipment of samples to the laboratory.

3.3 SAMPLE CUSTODY

The primary objective of sample custody was to create an accurate, written record that can be used to trace the possession and handling of samples so that their quality and integrity are maintained from collection until completion of required analyses. Adequate sample custody was achieved by means of approved field and analytical documentation. Such documentation includes the chain-of-custody record that was initially completed by the sampler and was signed by those individuals who accepted custody of the sample.

A sample was in custody if at least one of the following was true:

- It was in someone's physical possession.

- It was in someone's view.
- It was secured in a locked container or otherwise sealed so that tampering would be evident.
- It was kept in a secured area, restricted to authorized personnel only.

Sample control and chain-of-custody in the field and during transportation to the laboratory was conducted in general conformance with the procedures described below:

- As few people as possible handled samples.
- Sample containers were obtained as new or pre-cleaned from the laboratory performing the analyses.
- The sample collector was personally responsible for the completion of the chain-of-custody record and the care and custody of samples collected until they were transferred to another person or dispatched properly under chain-of-custody rules.
- The cooler in which the samples were shipped was accompanied by the chain-of-custody record identifying its contents. The original record and laboratory copy accompanied the shipment (sealed inside the shipping container). The other copy was forwarded to Landau Associates along with the sample collection forms.
- Coolers were sealed with strapping tape and custody seals for shipment to the laboratory. The method of shipment, name of courier, and other pertinent information was entered in the "remarks" section of the chain-of-custody record and traffic report.

When samples were transferred, the individuals relinquishing and receiving the samples signed the chain-of-custody form and recorded the date and time of transfer. The sample collector signed the form in the first signature space. Each person taking custody observed whether the shipping container was correctly sealed and in the same condition as noted by the previous custodian (if applicable); deviations were noted on the appropriate section of the chain-of-custody record.

A designated sample custodian at the laboratory accepted custody of the shipped samples, verified the integrity of the custody seals, and certified that the sample identification numbers match those on the chain-of-custody record. The custodian entered the sample identification number data into a bound logbook, which was arranged by a project code and station number. If containers arrived with broken custody seals, the laboratory noted this on the chain-of-custody record and immediately notified the sampler and Landau Associates.

4.0 EQUIPMENT DECONTAMINATION

The decontamination procedures described below were used by field personnel to clean drilling, sampling, and related field equipment. Deviation from these procedures were documented in field records.

4.1 WATER LEVEL INDICATOR

The tape from the water level indicator was rinsed with potable water between each well measurement, and washed with Alconox soap and rinsed with deionized water. If petroleum product or sheen was encountered, then hexane was used to remove product; hexane was not used for product removal during the course of the supplement RI activities.

4.2 SAMPLING EQUIPMENT

Sampling equipment (e.g., stainless-steel bowls, stainless-steel spoons, soil split-spoon samplers, etc.) was cleaned using a three-step process, as follows:

1. Surfaces of equipment that would be in contact with the sample were scrubbed with brushes using an Alconox solution
2. Scrubbed equipment was rinsed with clean tap water
3. Equipment was rinsed a final time with deionized water to remove tap water impurities.

Decontamination of reusable sampling devices occurred between each sample collection, as necessary.

4.3 HEAVY EQUIPMENT

Heavy equipment (e.g., the drilling rigs and drilling equipment that was used downhole, or that contacted material and equipment going downhole) was cleansed by a hot water, high pressure wash before each use and at completion of the project. Potable tap water was used as the cleansing agent.

5.0 RESIDUAL WASTE MANAGEMENT

Soil cuttings generated during boring advancement were temporarily stored onsite in 55-gallon drums. Disposal methods for soil stored in 55-gallon drums was determined based on the analytical results for the soil. Some volume of MSW was stored with soil/wood debris material when advancing borings through the known extent of MSW. The results of soil analyses from the samples collected from beneath the MSW, stored residual waste (including the potential MSW volumes) did not indicate that special offsite disposal was required.

Soil removed from test pit explorations was placed back in the test pits in the reverse order it was removed. If evidence of potential contamination, such as sheen, was present, the soil would not have been placed back in the test pit and would instead be placed in a 55-gallon drum; no sheen or signs of liquid wastes were observed during test pitting activities.

Water generated during well development, purging, and decontamination was temporarily stored onsite in 55-gallon drums. Offsite disposal methods for groundwater stored in drums was determined based on the analytical results for the groundwater samples.

6.0 WELL AND PROBE SURVEY

Newly installed groundwater wells and LFG probes were surveyed using GPS equipment to facilitate accurate placement of these features on project figures and drawings, as well as for submittal to Ecology. After completion of the new groundwater well installations, reference elevations for both the new and existing groundwater wells were surveyed by a professional licensed surveyor to the nearest 0.01 ft. Reference elevations were obtained are the top of monitoring well casing and ground surface adjacent to the each groundwater monitoring well. This information was used in evaluating groundwater elevation contouring and lithological unit elevations.

* * * * *

This document has been prepared under the supervision and direction of the following key staff:

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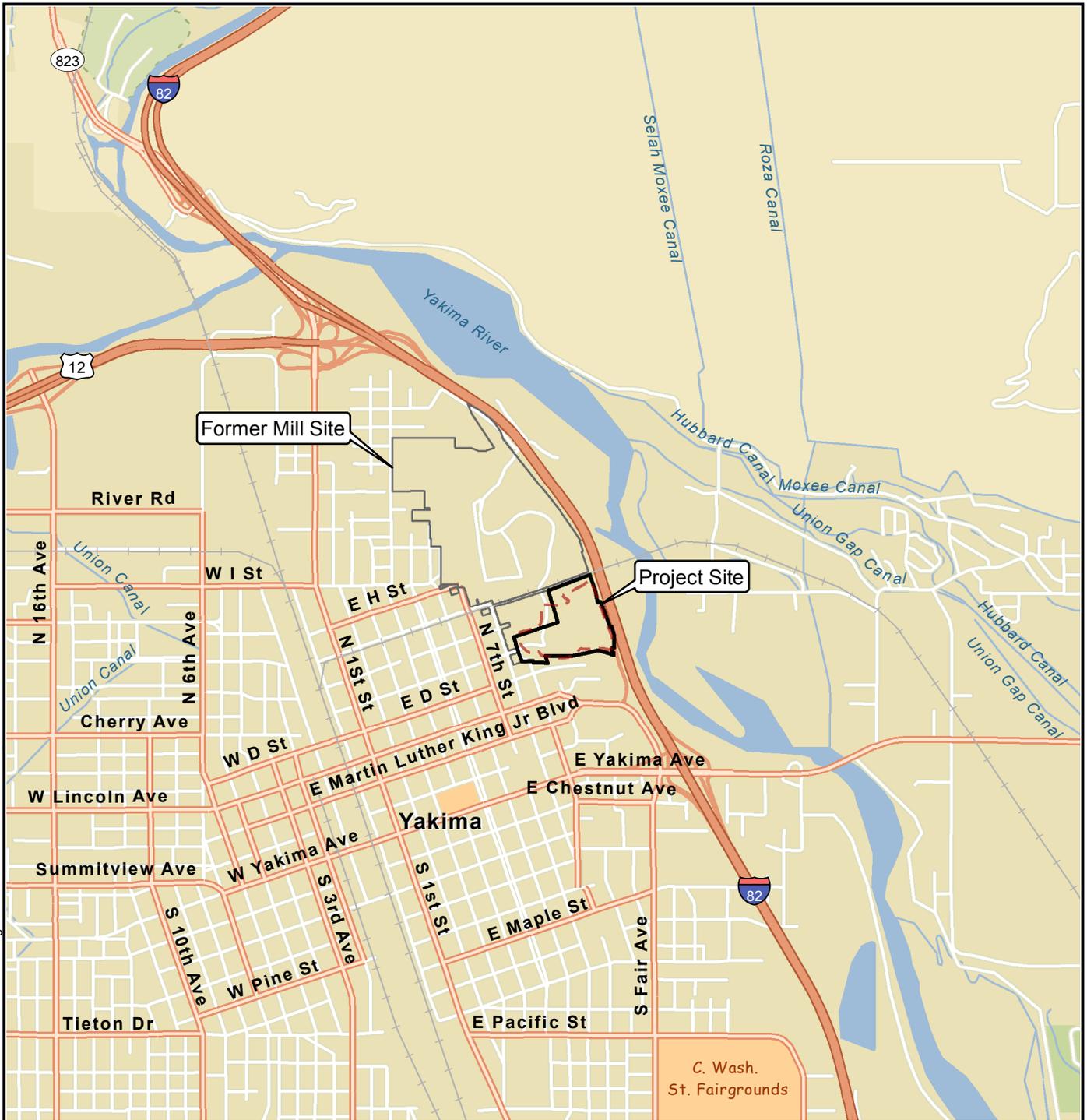
CBK/JAF/TLS/kes

7.0 REFERENCES

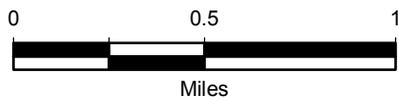
Ecology. 2008. *Minimum Standards for Construction and Maintenance of Wells* (Chapter 173-160 WAC). Washington State Department of Ecology. Updated December.

Landau Associates. 2015. *Supplemental Remedial Investigation Report, Closed City of Yakima Landfill Site*. Prepared for the City of Yakima. September.

Landau Associates. 2014. *Work Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington*. Prepared for the City of Yakima. August 11.



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Data Source: Esri 2012



Closed City of Yakima
Landfill Site
Yakima, Washington

Vicinity Map

Figure
B-1

TABLE B-1
SAMPLE CONTAINERS, PRESERVATIVES, AND HOLDING TIMES
CLOSED CITY OF YAKIMA LANDFILL SITE

Matrix / Analysis	Container	Preservation	Maximum Holding Time (Days)
Soil:			
NWTPH-HCID	1 - 8 oz wide mouth glass	Store cool at 6°C	14
NWTPH-Dx	1 - 8 oz wide mouth glass	Store cool at 6°C	14
NWTPH-G	2 x 40-ml vial - glass 1 2-oz jar - glass	Add MeOH Store cool at 6°C 2-oz jar - no headspace	14
VOCs	3 x 40-ml vial - glass 1 2-oz jar - glass	2 vials - Add MeOH 1-vial - Add $\text{Na}_2\text{S}_2\text{O}_4$ 2-oz jar - no headspace Store cool at 6°C	14
Metals (including mercury)	1 - 4 oz wide mouth glass	Store cool at 6°C	180 (mercury 28 days)
Hexavalent chromium	1 - 4 oz wide mouth glass	Store cool at 6°C	28
SVOCs / PAHs	1 - 8 oz wide mouth glass	Store cool at 6°C	14
PCBs	1 - 8 oz wide mouth glass	Store cool at 6°C	14
Pesticides	1 - 8 oz wide mouth glass	Store cool at 6°C	14
Fluoride	1 - 4 oz wide mouth glass	Store cool at 6°C	28
Nitrate and Nitrite	1 - 4 oz wide mouth glass	Store cool at 6°C	7
pH	1 - 4 oz wide mouth glass	Store cool at 6°C	14
Water:			
NWTPH-HCID	2 x 500-ml amber glass	Store cool at 6°C	7
NWTPH-G	2 x 40-ml vials - glass	Add HCl to pH<2; Store cool at 6°C	14
NWTPH-Dx	2 x 500-ml amber glass	Store cool at 6°C	7
VOCs	3 x 40-ml vials - glass	Add HCl to pH<2; Store cool at 6°C	14
Metals, including mercury (total and dissolved)	500-ml polyethylene	Add HNO_3 ; Store cool at 6°C	180 (mercury 28 days)
Hexavalent chromium (total and dissolved)	500-ml polyethylene	Store cool at 6°C	24 hours
SVOCs / PAHs	2 x 500-ml amber glass	Store cool at 6°C	7
PCBs	2 x 500-ml amber glass	Store cool at 6°C	7
Pesticides	2 x 500-ml amber glass	Store cool at 6°C	7
Fluoride	500-ml polyethylene	Store cool at 6°C	28
Chloride	500-ml polyethylene	Store cool at 6°C	28
Nitrate and Nitrite	500-ml polyethylene	Store cool at 6°C	48 hours
Sulfate	500-ml polyethylene	Store cool at 6°C	28
Alkalinity	500-ml polyethylene	Store cool at 6°C	14
Bicarbonate	500-ml polyethylene	Store cool at 6°C	14
Ammonia	500-ml polyethylene	Add H_2SO_4 to pH<2; Store cool at 6°C	28
Total Organic Carbon	500-ml polyethylene	Add H_2SO_4 to pH<2; Store cool at 6°C	28
Total Dissolved Solids	500-ml polyethylene	Store cool at 6°C	7

°C = degrees Celsius
 HCID = hydrocarbon identification
 HCl = hydrogen chloride
 HNO_3 = nitric acid
 H_2SO_4 = sulfuric acid
 MeOH = methanol
 ml = milliliter

$\text{Na}_2\text{S}_2\text{O}_4$ = sodium hydrosulfite
 oz = ounce
 PAHs = polycyclic aromatic hydrocarbons
 PCBs = polychlorinated biphenyls
 SVOCs = semivolatle organic compounds
 TPH = total petroleum hydrocarbons
 VOCs = volatile organic compounds

Quality Assurance Project Plan

Appendix C

**Quality Assurance Project Plan
Supplemental Remedial Investigation
Closed City of Yakima Landfill Site
Yakima, Washington**

September 14, 2015

Prepared for
City of Yakima

DRAFT

QUALITY ASSURANCE PROJECT PLAN

September 2015

Supplemental Remedial Investigation

Closed City of Yakima Landfill Site
Yakima, Washington

Prepared For:

City of Yakima

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LIST OF ABBREVIATIONS AND ACRONYMS

ARAR	applicable or relevant and appropriate requirement
CFR	Code of Federal Regulations
City	City of Yakima
CL	cleanup level
CWA	Clean Water Act
DLs	detection limits
DQOs	data quality objectives
Ecology	Washington State Department of Ecology
EIM	Environmental Information Management
EPA	Environmental Protection Agency
FS	feasibility study
Ft	feet
HCID	petroleum hydrocarbon identification
LCDS	laboratory control sample duplicates
LCS	laboratory control samples
LEL	lower explosive limit
LFG	landfill gas
MCL	maximum contaminant level
MDL	method detection limit
Mill Site	Boise Cascade Mill and Plywood Facility
MQOs	measurement quality objectives
MS	matrix spike
MSD	matrix spike duplicates
MSL	mean sea level
MSW	municipal solid waste
MTCA	Model Toxics Control Act
NTR	National Toxics Rule
ORP	oxygen reduction potential
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PDF	portable document format
PID	photoionization detector
ppm	parts per million
PQL	practical quantitation limit
PSL	preliminary screening level
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
QL	quantitation limit
RI	Remedial Investigation
RPD	relative percent difference
RL	reporting limit
SAP	Sampling and Analysis Plan
SGC	silica gel cleanup
Site	closed City of Yakima Landfill Site
SL	screening level

LIST OF ABBREVIATIONS AND ACRONYMS (Cont.)

SVOCs	semivolatile organic compounds
TDS	total dissolved solids
TEE	Terrestrial Ecological Evaluation
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TPH-Dx	diesel- and motor oil-range total petroleum hydrocarbons
TPH-G	gasoline-range total petroleum hydrocarbons
VCP	Voluntary Cleanup Program
VOCs	volatile organic compounds
WAC	Washington Administrative Code
Yakima Resources	Yakima Resources, LLC

1.0 INTRODUCTION

This quality assurance project plan (QAPP) summarizes the quality assurance/quality control (QA/QC) procedures that will be used during the implementation of the supplemental remedial investigation (RI) at the closed City of Yakima (City) Landfill Site (Site), located in Yakima, Washington. This QAPP is an appendix to the *Supplemental Remedial Investigation Report, Closed City of Yakima Landfill Site, Yakima,, Washington*. This QAPP was prepared using guidance from the Washington State Department of Ecology's *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies* (Ecology; Ecology 2004).

QAPP documentation to support supplemental RI activities was originally provided as part of the Work Plan submitted to Ecology (Landau Associates 2014). This QAPP has been updated based on the procedures and methodologies used during implementation of the supplemental RI and is intended to be used to support future investigation activities and subsequent data management, as necessary.

2.0 BACKGROUND

The scope of the supplemental RI, as described in the Work Plan (Landau Associates 2014), includes collection and laboratory analysis of soil and groundwater samples, and in-field surveys of landfill gas (LFG) concentrations at the Site. The purposes of the supplemental RI activities are to further characterize the Site by quantifying the nature and extent of potential contamination and to improve the understanding of the extent of MSW and the Site's geologic and hydrogeological conditions. This QAPP presents the project quality objectives, laboratory methods, QA/QC requirements, corrective actions, and data management procedures governing the supplemental RI activities.

2.1 SITE DESCRIPTION AND HISTORY

The Site is located at the southern end of the former Boise Cascade Mill and Plywood Facility (Mill Site) on the eastern edge of the city. The Site is defined by the extent of the municipal solid waste (MSW) within the former landfill and the presence of any contamination associated with releases from the former landfill. The Site was developed as a part of an approximate 240-acre mill property by the Cascade Lumber Company in 1903 with mill operations beginning in 1904 (Parametrix 2008). Between 1963 and 1970, the City operated an MSW landfill at the Site. As part of landfill operations, MSW was placed in a former log pond that originally occupied the Site (City of Yakima 1996). By the time landfill operations ceased in 1970, the MSW was covered and the area brought to grade with a mixture of fill soil and wood debris. The Site was then used until 2010 for log storage, including temporary log storage and log chipping operations by the tenant of the Landfill Parcel [Yakima Resources, LLC (Yakima Resources)].

The Site is currently primarily covered with wood debris and various mixtures of reclaimed bark, fines, and rock. Vegetation has started to reclaim some areas of the Site. The Site is situated at an elevation of approximately 1,070 feet (ft) above mean sea level (MSL), sloping slightly to the east and southeast, toward the Yakima River (which is located approximately 600 ft to the east, beyond I-82).

2.2 PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

Since 1998, several investigations have been conducted that focused on the environmental conditions at or in the vicinity of the Site. Previous investigations have included assessment of soil, soil vapor, and groundwater; historical investigation locations and the existing groundwater monitoring well network are shown on Figures 2 and 3 of the *Supplemental Remedial Investigation Report, Closed City of Yakima Landfill Site* (Supplemental RI Report; Landau Associates 2015a). Results from each investigation are discussed in the Section 3.0 of the Supplemental RI Report; groundwater analytical

results from previous investigations, specifically information on historical metals, volatile organic compounds (VOCs), fluoride, nitrate, and pH results are presented in Appendix A of the Supplemental RI Report.

2.3 DATA GAPS

At the direction of the Washington State Department of Ecology the City entered the Voluntary Cleanup Program (VCP) in February 2014 (VCP Project CE040; SLR 2014) and requested that Ecology review reports summarizing the results of the investigations conducted through 2012 relating to the Site and provide its opinion concerning the status of the RI process. The resulting opinion letter (Ecology 2014) indicated that characterization of soil and groundwater at the Site was insufficient to support the selection of a cleanup action, and that additional investigation is needed to complete the RI for the Site. Specific data gaps identified in Ecology's opinion letter include the following:

- The potential presence and associated lateral and vertical extent of soil contamination at the Site has not been fully investigated.
- The extent of MSW along the eastern edge of the Site has not been fully identified and potential methane concentrations have not been assessed in this area.
- The lateral and vertical extent of groundwater contamination at the Site has not been fully characterized and four consecutive quarters of groundwater sampling and analysis is recommended to effectively support Site groundwater characterization.
- A terrestrial ecological evaluation (TEE) is required for the Site (Ecology 2014).

2.4 SITE PRELIMINARY SCREENING LEVELS

As part of the RI process, preliminary screening levels (PSLs) were developed for the media of potential concern at the Site (i.e., soil, groundwater, and LFG) using Model Toxics Control Act (MTCA) values and applicable or relevant and appropriate requirements (ARARs). The method detection limits (MDLs) and reporting limits (RLs) for the various laboratory analyses were compared with the PSLs to determine appropriate analytical methods for use in the RI; the PSLs were then adjusted to the laboratory quantitation limit [QL, applied as the practical quantitation limit (PQL)] for comparison purposes, as appropriate.

The PSLs are used in the RI in the evaluation and interpretation of the sample analytical data. Ecology's Opinion Letter identified that the laboratory MDLs/RLs for some compounds analyzed for in the previously collected RI groundwater samples were above the previously applied screening levels (SLs) and, therefore, these compounds could not be eliminated from further evaluation (Ecology 2014).

2.4.1 GROUNDWATER SCREENING LEVELS

Ecology's Opinion Letter (2014) indicated that the use of MTCA Method A and B groundwater criteria are appropriate for the Site. In addition, the shallow groundwater beneath the Site does not meet the MTCA criteria for non-potable groundwater [Washington Administrative Code (WAC) 173-340-720(2)]; therefore, the federal and state maximum contaminant level (MCL) criteria for protection of groundwater as drinking water are considered as ARARs, and were also included in the evaluation to established Site PSLs. As discussed with Ecology, since the point of discharge for groundwater in the relative vicinity of the Site is the Yakima River, the groundwater PSL evaluation conservatively includes consideration of criteria protective of surface water.

Development of groundwater PSLs protective of drinking water included the following methodology:

- If MTCA Method A and Method B criteria were available, and if no state/federal MCL criteria were established, the Method A value was selected as the Site groundwater PSL protective of drinking water
- If MTCA Method A and state/federal MCL criteria were available, the lower of the two was selected as the Site groundwater PSL protective of drinking water
- In the absence of MTCA Method A criteria, but with MTCA Method B formula values and state/federal MCL criteria available, the lower of the latter two were selected as the Site groundwater PSL protective of drinking water
- If only one criterion was available (i.e., MTCA Method A, MTCA Method B formula values, or a state/federal MCL), that criterion was selected as the groundwater PSL protective of drinking water.

The groundwater PSL protective of surface water evaluation included consideration of the following potential criteria:

- Surface water MTCA Method B non-carcinogenic and carcinogenic criteria
- Freshwater aquatic life acute and chronic criteria as outlined under Chapter 173-201A WAC, Clean Water Act (CWA) §304, and the National Toxics Rule (NTR) 40 Code of Federal Regulations (CFR) 131 regulations
- Human Health fresh water criteria as outlined under the CWA §304 and NTR 40 CFR 131 regulations.

The Site-specific groundwater PSLs were then established as the lower of the values protective of drinking water and surface water, as presented in Tables C-1 through C-3. For several chemicals, the PSL criterion was lower than the laboratory-specific QL¹. In those instances, the initial chemical-specific PSL was raised to the laboratory-specific QL (applied as the PQL) for data comparison and screening purposes.

¹ QL/PQL values are those provided by the analytical laboratory supporting the RI (ALS Global) and are included in Table 6 of the Supplemental RI Report and in the QAPP included with the submitted Work Plan.

2.4.2 SOIL SCREENING LEVELS

As with groundwater, Ecology's Opinion Letter also indicated that the use of MTCA Method A and B criteria for unrestricted land uses was appropriate for establishing SLs for Site soil (Ecology 2014). Therefore, the following methodology was used to establish the PSLs for chemicals in soil:

- If a MTCA Method A criterion for unrestricted land uses was available, that criterion was selected as the chemical-specific PSL
- In the absence of MTCA Method A criteria, the MTCA Method B cleanup level was evaluated and selected as the chemical-specific PSL. The Method B criterion was established as the lower of the:
 - Protection of groundwater 3-phase model value²
 - Direct contact pathway (ingestion only) Method B unrestricted land use standard formula value (lower of carcinogenic and non-carcinogenic values).

After this evaluation was completed, certain Site-specific soil PSLs were subsequently adjusted based on the current groundwater analytical results of the RI. Per WAC 173-340-747(3)(f), protection of groundwater does not have to be considered in developing the Method B soil PSLs [and subsequent cleanup levels (CLs)] if it can be empirically demonstrated that the compound's concentration in soil is considered adequately protective of groundwater. Therefore, for compounds that were not detected in groundwater samples at concentrations greater than the Site-specific groundwater PSL, a preliminary empirical demonstration can be made that soil concentrations for a given compound are protective of groundwater (see Landau Associates 2015a, Section 6.2).

The Site-specific soil PSLs are presented in Table C-4. The soil PSLs will be re-evaluated based on the approach outlined in the section upon completion of the additional planned RI activities. As mentioned previously, soil PSLs may also be revised to reflect regional and Site-specific background values (especially metals) in accordance with the procedures outlined in MTCA, if appropriate.

2.4.3 LANDFILL GAS SCREENING LEVELS

The MTCA cleanup regulation [WAC 173-340-750(3)(b)(iii)] provides a Method B cleanup level for methane in indoor and outdoor air of 10 percent of the lower explosive limit (LEL; 0.5 percent by volume). This value is considered protective of human health and the environment; however, it does not specifically address concentrations of LFG in soil. Because most LFG investigations involve collecting measurements from probes extending into the shallow subsurface, the data are not representative of

² The 3-phase model evaluation incorporated groundwater PSL inputs (Table C-3); the groundwater PSLs inputted into the model included those instances where the groundwater PSL was revised to the laboratory-specific QL applied as the PQL.

indoor or outdoor air. As a result, SLs based on solid waste regulations are typically used to evaluate LFG data.

WAC 173-304-460(2) is applicable to landfills that operated prior to 1991. Although the former landfill was not permitted under these regulations, the regulations provide relevant compliance standards that are considered generally applicable and protective for contaminant migration or exposure, in the absence of other directly applicable regulations. The above-noted regulations provide the following standards, which often are identified as PSLs for LFG:

- Methane gas generated at a landfill must not exceed 25 percent of the LEL in potential future structures (1.25 percent methane by volume)
- Methane gas must not exceed the LEL for methane at the property (i.e., Site) boundary (5.0 percent methane by volume)
- The concentration of methane gas must not exceed 100 parts per million (ppm) in offsite structures.

Because no buildings or structures exist at the Site, the second criterion noted above represents an appropriate PSL to consider when evaluating Site LFG concentrations.

3.0 PROJECT DESCRIPTION

The project goals, objectives, and data inputs are presented below in Sections 3.1 and 3.2.

3.1 GOALS AND OBJECTIVES

The purpose of the supplemental RI activities is to further characterize the Site by quantifying the nature and extent of potential contamination and to improve the understanding of the extent of MSW and the Site's geologic and hydrogeological conditions. The data required to meet these goals include:

- The number of samples of each media collected from specified locations will provide sufficient information to document and characterize current Site conditions.
- The analytical methods and associated RLs for each media will allow for evaluation of the concentrations detected relative to appropriate screening criteria for the protection of human health and the environment; laboratory reporting limits are presented for soil and groundwater in Tables C-5 and C-6, respectively.
- The type and location of media (e.g., soil, LFG, groundwater, etc.) that may require cleanup.

Data collected during the supplemental RI activities will be representative of Site conditions and comparable to selected screening criteria as discussed in Section 2.4, so that a preferred cleanup action alternative for the Site can be selected and implemented during the Feasibility Study (FS) process.

3.2 DATA INPUTS

A general description of the sampling plan for each media of concern is described below in the following sections. Field investigations will be conducted from September 2014 through June 2015.

Soil samples will be collected from ten boring locations that were subsequently completed as monitoring wells (see below). At each boring location, soil samples will be collected for possible laboratory analysis from various depth intervals as follows.

- For the wells located within the footprint of the known extent of MSW:
 - Near surface soil samples above the MSW, pending availability of soil, will be collected at each location and analyzed for petroleum hydrocarbon identification (HCID), followed by TPH-G [gasoline-range total petroleum hydrocarbons (TPH)] and/or TPH-Dx (diesel- and motor oil-range petroleum hydrocarbons) depending on the result of the HCID screen³. Near surface soil samples will also be collected for analysis of polycyclic aromatic hydrocarbons (PAHs) if signs of ash or past combustion are observed at the time of sampling.

³ Soil samples requiring follow-on analysis for TPH-Dx will be analyzed with and without silica gel cleanup (SGC) as directed by Ecology.

- One sample will be collected at each boring location from below the MSW and above the existing groundwater level; given the known interaction of groundwater through the base of the MSW, the ability to be able to collect a dry soil sample may be limited. The sample collected beneath the MSW will be analyzed for VOCs, semivolatile organic compounds (SVOCs), PAHs, chlorinated pesticides, polychlorinated biphenyls (PCBs), total metals⁴, conventionals (i.e., fluoride, nitrate, and pH), and TPH [HCID with possible follow-up analyses for TPH-G and/or TPH-Dx].
- For the wells installed outside the footprint of the known extent of MSW:
 - One sample will be collected at each boring location from directly above the groundwater interface. The sample will be analyzed for VOCs, SVOCs, PAHs, chlorinated pesticides, PCBs, total metals², conventionals (fluoride, nitrate, and pH), and TPH [HCID with follow-up analyses for TPH-G and/or TPH-Dx as necessary based on the result of the initial HCID screening].
 - One additional sample will also be collected for analysis at each boring location based on field screening [e.g., visual or olfactory cues, photoionization detector (PID) readings, etc.]. The sample will be analyzed for VOCs, SVOCs, PAHs, chlorinated pesticides, PCBs, total metals¹, conventionals (fluoride, nitrate, and pH) and TPH [HCID with follow-up analyses for TPH-G and/or TPH-Dx as necessary based on the result of the initial HCID screening].

Groundwater monitoring well samples collected for analysis at the Site will include samples from the 10 new wells and from 16 existing wells (total of 26)⁵. Groundwater monitoring and sampling at these wells will provide information to evaluate and document groundwater flow and groundwater quality at the Site. The groundwater samples will be analyzed for a combination of VOCs, SVOCs, PAHs, chlorinated pesticides, PCBs, total and dissolved metals⁶, conventionals [fluoride, nitrate, nitrite, pH (field meter), alkalinity, bicarbonate, sulfate, ammonia], TPH [HCID with follow-up analyses for TPH-G and/or TPH-Dx as necessary based on the result of the initial HCID screening⁷], total organic carbon (TOC), and total dissolved solids (TDS). This entire list of analytes will not be analyzed in every groundwater sample (e.g., conventionals). The sampling strategy and schedule is included in the Supplemental RI Report (Landau Associates 2015a) and in the associated Sampling and Analysis Plan (SAP; Landau Associates 2015b).

Soil samples will also be collected for selected laboratory analysis from borings advanced for the installation of new LFG probes used to evaluate LFG concentrations along the perimeter of the known

⁴ Arsenic, barium, cadmium, chromium (total), hexavalent chromium, lead, iron, manganese, mercury, selenium, silver, and sodium

⁵ Sampling from groundwater wells FPP-MW-1 and FPP-MW-2 was added to the supplemental RI program after the September 2014 sampling event to further evaluate TPH concentrations in that area.

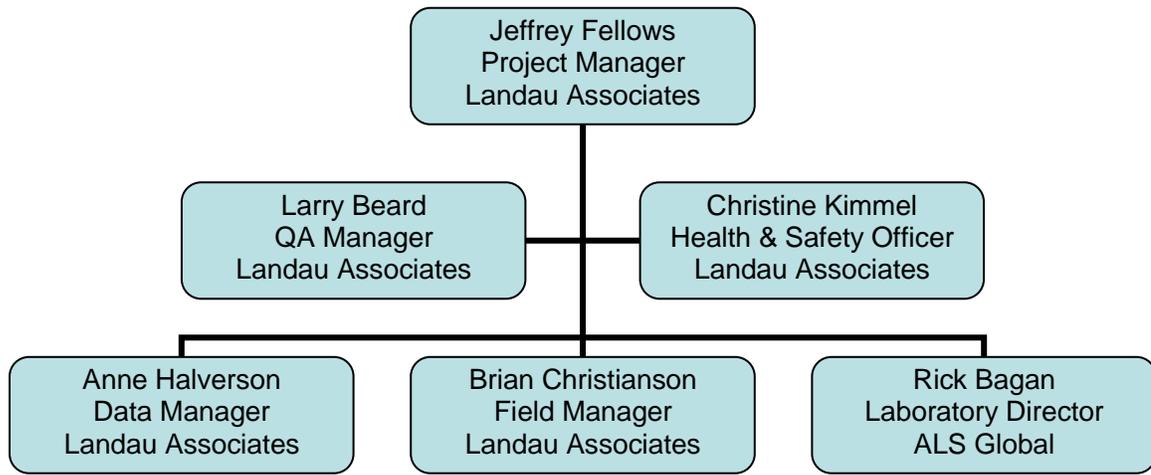
⁶ Groundwater samples were analyzed for the same metals compounds as the soil samples; select groundwater samples were also analyzed for calcium and magnesium.

⁷ Groundwater samples requiring follow-on TPH-Dx analysis will be analyzed with and without SGC as directed by Ecology.

extent of MSW. Soil samples will be collected based on the approach noted above for soil samples collected at wells installed outside of the footprint of the known extent of MSW.

LFG concentrations will be collected from existing LFG probes and the new LFG probes installed around the footprint of the known extent of MSW. LFG concentrations will be collected from each LFG probe and analyzed in the field using a CES/Landtec GEM-2000 plus multi-meter (or similar meter) as discussed in the Work Plan (Landau Associates 2014). LFG probes will be sampled to determine concentrations of methane, carbon monoxide, carbon dioxide, hydrogen, hydrogen sulfide, and oxygen.

4.0 ORGANIZATION AND SCHEDULE



The proposed schedule for the RI field and reporting activities is provided below.

Activity	Proposed Schedule
Field	
Coordination with Site owner, tenant, City, and Washington State Department of Transportation	August 2014 and ongoing, as necessary
Initial Site Visit <ul style="list-style-type: none"> Boring/well location identification Private utility location support 	Week of August 25, 2014
Soil and Groundwater Investigation <ul style="list-style-type: none"> Public utility locating New soil borings, soil sampling Groundwater well installation 	September 2 – 9, 2014
First Quarter Sampling <ul style="list-style-type: none"> Groundwater sampling and elevations Updated groundwater well survey 	September 15 – 19, 2014
MSW Investigation <ul style="list-style-type: none"> Test Pit Excavation New Landfill Gas Probe Installation 	October 2014
Second Quarter Sampling <ul style="list-style-type: none"> Groundwater sampling and elevations Gas probe survey 	Mid-December 2014
Third Quarter Sampling <ul style="list-style-type: none"> Groundwater sampling and elevations 	Mid-March 2015
Landfill Gas Probe Installation <ul style="list-style-type: none"> Eastern property boundary 	April 2015
Fourth Quarter Sampling <ul style="list-style-type: none"> Groundwater sampling and elevations Gas probe survey 	Mid-June 2015

Activity	Proposed Schedule
Reporting	
Final RI Work Plan	Submitted 45 calendar days after receipt of Ecology's comments on the draft RI Work Plan
Draft Supplemental RI Report	Submitted to Ecology within 60 calendar days following receipt of the final analytical data associated with planned RI activities.
Final Supplemental RI Report	Submitted to Ecology within 30 calendar days following receipt of Ecology's comments on the draft Supplemental RI Report.
Environmental Information Management (EIM) Data Submittal	Within 30 calendar days of receipt of the final analytical data associated with the various rounds of investigation discussed in the draft Work Plan.

5.0 QUALITY ASSURANCE OBJECTIVES

The QA objectives established for this project include the development and implementation of procedures that would ensure collection of representative data of known, acceptable, and defensible quality. The data quality parameters used to assess the acceptability of the data are precision, accuracy, representativeness, comparability, and completeness. These parameters are discussed in the following sections.

5.1 DATA QUALITY OBJECTIVES

The data quality objectives (DQOs) specify how good the project data must be to accomplish the overall project goals, which are to obtain data that are representative of Site conditions and are comparable to selected screening criteria, as described below, and to provide sufficient data so that the analysis and evaluations conducted allow for selection of a preferred cleanup action alternative for the Site during the FS process, as warranted.

The data required to meet this goal include:

- The number of samples of each media collected from specified locations provide sufficient information to document and characterize the current Site conditions
- The analytical methods and associated reporting limits for each media allow for evaluation of the concentrations detected relative to appropriate screening criteria for the protection of human health and the environment
- The type and location of media (e.g., soil, LFG, groundwater, etc.) that may require cleanup.

5.2 MEASUREMENT QUALITY OBJECTIVES

The measurement quality objectives (MQOs) for the project specify how good the data must be to meet the objectives of the project and are based on precision and accuracy, as described in Sections 5.2.1 through 5.2.7. Tables C-7a through f presents the measurement quality objectives and associated criteria for this project.

5.2.1 REPRESENTATIVENESS

Representativeness expresses the degree to which data accurately and precisely represent an actual condition or characteristic of a population. Representativeness can be evaluated using replicate samples, representative sampling locations, and blanks. Representativeness for the supplemental RI sampling was accomplished using appropriate selection of sampling locations for each media of potential

concern (soil, LFG, and groundwater). A description of the procedures used in completing the sampling program is provided in the SAP (Landau Associates 2015b).

5.2.2 COMPARABILITY

Comparability expresses the confidence with which one data set can be evaluated in relation to another data set. For this project, comparability of data was established through the use of standard analytical methodologies with MDLs/RLs that met screening level criteria to the extent possible, standard reporting formats, and common traceable calibration and reference materials. Methods to be used for analysis of soil, LFG, and groundwater are discussed in Section 3.0.

5.2.3 PRECISION

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared to their average values. Analytical precision is measured through laboratory control samples/laboratory control sample duplications (LCS/LCSD) and laboratory duplicate samples. Field precision is evaluated by the collection of groundwater blind field duplicates at a minimum frequency of 1 per sampling event or 1 in 20 samples. No field duplicates will not be collected for soil samples due to the inherent heterogeneity of the media.

Precision measurements can be affected by the nearness of a chemical concentration to the MDL, where the percent error [expressed as relative percent difference (RPD)] increases. The equation used to express precision is as follows:

$$RPD = \left| \frac{C_1 - C_2}{(C_1 + C_2)/2} \right| \times 100$$

where: C_1 = first sample value
 C_2 = second sample value (duplicate)
RPD = relative percent difference.

5.2.4 ACCURACY

Accuracy is an expression of the degree to which a measured or computed value represents the true value. Field accuracy is controlled by adherence to sample collection procedures as outlined in the SAP (Landau Associates 2015b).

Analytical accuracy may be assessed by analyzing “spiked” samples with known standards (surrogates, laboratory control samples, and/or matrix spike [MS]) and measuring the percent recovery. Accuracy measurements on spiked samples were carried out at a minimum frequency of 1 per laboratory analysis group or 1 in 20 samples per matrix analyzed. Because MS/matrix spike duplicates (MSDs) measure the effects of potential matrix interferences of a specific matrix, the laboratory performed MS/MSDs only on samples from this investigation and not from other projects. Surrogate recoveries were determined for every sample analyzed for organics.

Laboratory accuracy was evaluated against quantitative matrix spike, laboratory control spike, and surrogate spike recovery performance criteria provided by the laboratory. Accuracy can be expressed as a percentage of the true or reference value, or as a percent recovery in those analyses where reference materials are not available and spiked samples are analyzed. The equation used to express accuracy is as follows:

$$\text{Percent Recovery} = \frac{(\text{Spiked Sample Result} - \text{Unspiked Sample Result})}{\text{Amount of Spike Added}} \times 100$$

Control limits for percent recovery for soil and groundwater samples were laboratory acceptance limits generated according to U.S. Environmental Protection Agency (EPA) guidelines.

5.2.5 BIAS

Bias is the systematic or persistent distortion of a measured process that causes errors in one direction. Bias of the laboratory results was evaluated based on analysis of method blanks and surrogate recoveries as described in Section 7.0.

5.2.6 SENSITIVITY

Sensitivity is the ability to discern the difference between very small amounts of a substance. For the purposes of this project, sensitivity is the lowest concentration that can be accurately detected by the analytical method. The analytical method will be considered sufficiently sensitive if the DLs are below project SLs. MDLs and DLs are discussed in Section 7.0.

5.2.7 COMPLETENESS

Completeness is a measure of the proportion of data obtained from a task sampling plan that is determined to be valid. It is calculated as the number of valid data points divided by the total number of data points requested. The QA objective for completeness during this project is 95 percent.

Completeness will be routinely determined and compared to this control criterion during the course of implementation of the supplemental RI program.

6.0 LABORATORY METHODS

Selected soil and groundwater samples were analyzed for VOCs, SVOCs, PAHs, chlorinated pesticides, PCBs, total metals and dissolved metals (groundwater only) [i.e., arsenic, barium, cadmium, calcium, total chromium, chromium III, hexavalent chromium (based on total chromium results)⁸, iron, lead, magnesium, manganese, mercury, selenium, silver, and sodium], conventionals (i.e., fluoride, nitrate, nitrite, sulfate, ammonia, alkalinity, and pH), and TPH (HCID with follow-up analyses for TPH-G and/or TPH-Dx as necessary based on the result of the initial HCID screening), TOC, and TDS. Analytes detected below the laboratory reporting limit and above the method detection limit will be reported and qualified as an estimate (i.e., flagged with a J).

Laboratory methods, RLs, PQLs, and MDLs for the analysis of each of the above constituents in soil and groundwater are summarized in Tables C-5 and C-6, respectively. For the groundwater analyses (except dissolved metals), suspended material in the sample was allowed to settle and the sample was not agitated prior to analysis of the supernatant. For the dissolved metals analyses, the samples were filtered in the field to remove suspended material. TPH-Dx analysis, as required, was completed both with and without SGC.

Sample containers, preservation, and holding times are provided in Table B-1 in the SAP (Landau Associates 2015b).

⁸ Hexavalent chromium was directly analyzed on September 2014 investigation samples only. Subsequent sampling events relied on the total chromium results as an indication that follow-on hexavalent chromium should be analyzed; no follow-on hexavalent chromium analysis was required during planned RI activities.

7.0 QUALITY ASSURANCE/QUALITY CONTROL REQUIREMENTS

This section describes the procedures that were implemented to: 1) ensure sample integrity from the time of sample collection to the time of analysis in the laboratory, 2) obtain the appropriate chemical and physical data, 3) collect field and laboratory quality control samples, 4) monitor performance of the laboratory and field measurement systems, 5) correct potential deviations from the methods or QA requirements established in this QAPP, and 6) report and validate the data.

7.1 LABORATORY INSTRUMENT CALIBRATION

The analytical laboratory project manager is responsible for maintaining laboratory instruments in proper working order including routine maintenance and calibration, and training of personnel in maintenance and calibration procedures. Laboratory instruments will be properly calibrated with appropriate check standards and calibration blanks for each parameter before beginning each analysis. Instrument performance check standards, where required, and calibration blank results will be recorded in a laboratory logbook dedicated to each instrument. At a minimum, the preventive maintenance schedules contained in the EPA methods and in the equipment manufacturer's instructions will be followed. Laboratory calibration procedures and schedules are as described in the laboratory QAPP.

7.2 FIELD EQUIPMENT CALIBRATION

Field meters, including pH, conductivity, dissolved oxygen, oxygen reduction potential (ORP), temperature probes, LFG, and PIDs, were calibrated and maintained in accordance with the manufacturer's specifications. Required routine maintenance was recorded in the field sampling logs.

7.3 FIELD DOCUMENTATION

A complete record of field activities was maintained for the duration of the field phase of the work. Documentation included the following:

- Daily recordkeeping by field personnel of field activities
- Recordkeeping of samples collected for analysis (field sampling forms)
- Use of sample labels and tracking forms for samples collected for analysis.

The field logs provide a description of sampling activities, sampling personnel, weather conditions, and a record of potential modifications to the procedures and plans identified in the SAP (Landau Associates 2015b). The field logs are intended to provide sufficient data and observations to enable participants to reconstruct events that occurred during the sampling period.

Sample possession and handling was also documented so that it was traceable from the time of sample collection to the laboratory and data analysis. Sample chain-of-custody forms and procedures are described in the SAP (Landau Associates 2015b).

7.4 SAMPLE HANDLING PROCEDURES AND TRANSFER OF CUSTODY

Samples submitted to the analytical laboratories were collected in the appropriate sample containers and preserved as specified in Table B-1 in the SAP (Landau Associates 2015b). The storage temperatures and maximum holding times for physical/chemical analyses are also presented in Table B-1 of the SAP.

The transportation and handling of samples was accomplished in a manner that not only protected the integrity of the sample, but also prevented detrimental effects due to release of samples. Samples were logged on a chain-of-custody form that was kept in coolers on ice until delivery to the analytical laboratory. The chain-of-custody accompanied each shipment of samples to the laboratory. Procedures for sample transportation and handling are described in Section 3.0 of the SAP (Landau Associates 2015b).

7.5 FIELD AND LABORATORY QUALITY CONTROL SAMPLES

Field and analytical laboratory control samples were collected to evaluate data precision, accuracy, representativeness, completeness, and comparability of the analytical results for this investigation. Soil and groundwater quality control samples are described below. The frequency at which they were collected and/or analyzed is also described. The laboratory-specific control limit information is provided in Table C-8.

7.5.1 BLIND FIELD DUPLICATES

A blind field duplicate was collected at a frequency of at least 1 per 20 groundwater samples per chemical analysis, not including QC samples, but not less than one field duplicate per sampling event (any continuous sampling period not interrupted by more than 2 days). The blind field duplicate consisted of a split sample collected at a single sample location. No soil blind field duplicate samples were collected due to the inherent heterogeneity of the samples. Groundwater blind field duplicates were collected by alternately filling sample containers for both the original and the corresponding duplicate sample at the same location to decrease variability between the duplicates. Blind field duplicate sample results were also used to evaluate data precision.

7.5.2 FIELD TRIP BLANKS

Field trip blanks consisted of deionized or distilled water sealed in a sample container provided by the analytical laboratory. The trip blank accompanied samples collected for the analysis of VOCs and TPH-G during transportation to and from the field, and then were returned to the laboratory with each shipment. The trip blank remained unopened until submitted to the laboratory for analysis. One trip blank per cooler containing groundwater and soil samples for VOCs and TPH-G analysis was evaluated to determine possible sample contamination during transport.

7.5.3 FIELD EQUIPMENT BLANKS

If non-dedicated sampling equipment is used (e.g., stainless steel bowls, spoons, etc.), field equipment rinsate blanks will be collected for groundwater and soil samples from the decontaminated, non-dedicated sampling equipment. In these instances, the rinsate blanks would consist of deionized water (supplied by the analytical laboratory) passed over or through decontaminated sampling equipment and collected in the appropriate sample containers. Equipment surfaces actually exposed to the samples being collected will be rinsed. As necessary, field equipment rinsate blanks will be collected at a rate of 1 blank per 20 samples per sample type, not including QC samples, but not less than 1 blank per sampling event.

No rinsate blanks will be collected from dedicated or disposable field equipment. Based on the procedural strategy outlined in the Work Plan (Landau Associates 2014) and the associated SAP (Landau Associates 2015b), soil samples will be collected using disposable material and dedicated sampling equipment will be used for groundwater sample collection; therefore, for these instances, field equipment blanks will not be collected.

7.5.4 LABORATORY DUPLICATES

A minimum of 1 laboratory duplicate per 20 samples, or 1 laboratory duplicate sample per batch of samples if fewer than 20 samples were obtained in a sample event, will be analyzed as a precision indicator. RPDs between recoveries of LCS/LCSD or MS/MSDs may also be used as an indicator per batch of samples.

7.5.5 LABORATORY METHOD BLANKS

A minimum of one laboratory method blank per 20 samples, one every 12 hours, or one per batch samples analyzed (if fewer than 20 samples were analyzed in a sample event) will be analyzed for the parameters being evaluated to assess possible laboratory contamination. Deionized water will be used whenever possible. Method blanks shall contain any reagents used for analysis. The generation and

analysis of additional method, reagent, and glassware blanks was not necessary as it did not appear that laboratory procedures possibly contaminated samples.

7.5.6 LABORATORY CONTROL SAMPLE

A minimum of one laboratory control sample per 20 samples, or one laboratory control sample per sample batch if fewer than 20 samples were obtained in a sample event, was analyzed for all parameters under evaluation.

7.5.7 SURROGATE SPIKES

Project samples analyzed for organic compounds were spiked with appropriate surrogate compounds as defined by the analytical methods.

7.6 LABORATORY QA/QC FOR CHEMICAL AND CONVENTIONAL ANALYSES

QA/QC for chemical testing includes laboratory instrument and analytical method QA/QC. Instrument QA/QC monitors the performance of the instrument and method QA/QC monitors the performance of sample preparation procedures. The analytical laboratory was responsible for instrument and method QA/QC. QA/QC procedures performed by the laboratory for analysis of soil and groundwater samples were in accordance with methods specified in Tables C-5 and C-6, respectively.

When an instrument or method control limit was exceeded, the laboratory contacted the Landau Associates' project manager immediately. The laboratory was responsible for correcting the problem and reanalyzing the samples within the sample holding time, if sample reanalysis was appropriate. Corrective actions are described further in Section 8.0.

8.0 CORRECTIVE ACTIONS

Corrective actions will be needed for two categories of nonconformance: field and analytical.

Corrective action procedures implemented based on detection of unacceptable data were evaluated and developed on a case-by-case basis. Such actions may include one or more of the following:

- Altering procedures in the field
- Using a different batch of sample containers
- Performing an audit of field or laboratory procedures
- Reanalyzing samples (if holding times allow)
- Resampling and analyzing
- Evaluating sampling and analytical procedures to determine possible causes of the discrepancies
- Accepting the data without action, acknowledging the level of uncertainty
- Rejecting the data as unusable.

During field operations and sampling procedures, the field personnel were responsible for conducting and reporting required corrective actions. A description of the action(s) taken was entered in the daily field notebook. The project manager was consulted immediately if field conditions were such that conformance with this QAPP was not possible. The field coordinator consulted with the Landau Associates' project manager, who could authorize changes or exceptions to the QA/QC portion of the QAPP, as necessary and appropriate.

During laboratory analysis, the laboratory QA officer was responsible for taking required corrective actions in response to equipment malfunctions. If an analysis did not meet DQOs outlined in this QAPP, corrective action was implemented following the guidelines noted in the EPA analytical methods as well as guidance from EPA's *National Functional Guidelines for Organic Data Review* (EPA 1999, 2008) and the *National Functional Guidelines for Inorganic Data Review* (EPA 2004, 2010). Laboratory correctives actions will be based on ALS Global's Quality Systems Manual and internal standard operating procedures.

If analytical conditions were such that nonconformance with this QAPP was indicated, Landau Associates was notified as soon as possible so that any additional corrective actions necessary could be taken. The laboratory project manager would then document the corrective action by a memorandum submitted to Landau Associates. A narrative describing the anomaly; the steps taken to identify and correct the anomaly; and any recalculation, re-analyses, or re-extractions would then be submitted with the data package in the form of a cover letter.

9.0 DATA VERIFICATION AND VALIDATION

The Supplemental RI data will be verified and validated to determine the results were acceptable and met the quality objectives described in Section 5.0. Prior to submitting a laboratory report, the laboratory verified that the data were consistent, correct, and complete, with no errors or omissions.

The verification and validation check will be performed with guidance from applicable portions of EPA's *National Functional Guidelines for Organic Data Review* (EPA 1999, 2008) and the *National Functional Guidelines for Inorganic Data Review* (EPA 2004, 2010). Landau Associates will perform an EPA Stage 2A equivalent validation for each laboratory data package including the following:

- Verification that the laboratory data package contained the necessary documentation (including chain-of-custody records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, sample-related quality control data, and quality control acceptance criteria).
- Verification that the requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

In the event that a portion of the data were outside the DQO limits, or sample collection and/or documentation practices were deficient, corrective action(s) would be initiated. Corrective action, as described in Section 8.0, was determined by the field coordinator and Landau Associates' QA officer in consultation with the Landau Associates' project manager and could include any of the following:

- Rejection of the data and resampling
- Qualification of the data
- Modified field and/or laboratory procedures.

Data qualification arising from data validation activities was described in a data validation report for each sampling event by matrix, rather than in individual corrective action reports.

10.0 DATA MANAGEMENT PROCEDURES

Laboratory analytical results, including QC data, were submitted electronically to Landau Associates. Electronic format included portable document format (PDF) and an Excel spreadsheet in Ecology's Environmental Information Management (EIM) format. Following validation of the data, necessary qualifiers were added to the electronic data tables (Excel spreadsheet). Survey data was provided electronically in a format that could be downloaded into an Excel spreadsheet. Field data (e.g., groundwater field parameter data, water levels measurements, etc.) were entered into an Excel spreadsheet and verified to determine the entered data were correct and without omissions and errors. Following receipt of the supplemental RI data and survey data, water level measurements and analytical results were formatted electronically and uploaded to Ecology's EIM system.

* * * * *

This document has been prepared under the supervision and direction of the following key staff:

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11.0 REFERENCES

- City of Yakima. 1996. Letter: *Interstate I-82 Gateway Project – January 11, 1996 Meeting Regarding Landfill and Wetland Issues*. From City of Yakima to Washington State Department of Ecology. January 22.
- Ecology. 2004. *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies*. Washington State Department of Ecology. July.
- EPA. 2010. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA-540-R-10-011. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. January.
- EPA. 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*. USEPA-540-R-08-01. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. June.
- EPA. 2004. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. EPA 540-R-04-004. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. October.
- EPA. 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*. EPA-540/R-99-008. U.S. Environmental Protection Agency. Office of Emergency and Remedial Response. Washington, D.C. October.
- Landau Associates. 2015a. *Supplemental Remedial Investigation Report, Closed City of Yakima Landfill Site*. Prepared for the City of Yakima. In process.
- Landau Associates. 2015b. *Sampling and Analysis Plan, Supplemental Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington*. Prepared for the City of Yakima. In process.
- Landau Associates. 2014. *Work Plan, Remedial Investigation, Closed City Yakima Landfill Site, Yakima, Washington*. Prepared for the City of Yakima. August 11.
- Parametrix. 2008. Phase II Environmental Site Assessment, Former City of Yakima Municipal Landfill Site, Yakima, Washington. October.
- SLR. 2014. Voluntary Cleanup Program Agreement and Application – Closed City of Yakima Landfill, Parcels 191318-41001 and 191318-42001, Yakima, Washington. Prepared on behalf of City of Yakima. February 19.

**TABLE C-1
GROUNDWATER SCREENING LEVELS PROTECTIVE OF DRINKING WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Maximum Contaminant Level (MCL)				Washington State Board of Health MCLs		Method B Standard Formula Values		Preliminary Method B Groundwater as Drinking Water Cleanup Level (µg/L)	Method A Groundwater Cleanup Level (µg/L)	Screening Level (Protective of Drinking Water) (µg/L)
		MCL (µg/L)	MCL Treatment Technique Action Level (µg/L)	MCL Goal (µg/L)	MCL Secondary (µg/L)	Primary (µg/L)	Secondary (µg/L)	Carcinogen (µg/L)	Non-carcinogen (µg/L)			
PETROLEUM HYDROCARBONS												
	tph, diesel range organics	--	--	--	--	--	--	--	--	--	500	500
	tph, heavy oils	--	--	--	--	--	--	--	--	--	500	500
	tph, mineral oil	--	--	--	--	--	--	--	--	--	500	500
	tph: gasoline range organics, benzene present	--	--	--	--	--	--	--	--	--	800	800
	tph: gasoline range organics, no detectable benzene	--	--	--	--	--	--	--	--	--	1,000	1,000
TOTAL/DISSOLVED METALS												
7440-38-2	arsenic	10	--	--	--	10	--	0.058	4.8	0.058	5.0	5.0
7440-39-3	barium	2,000	--	2,000	--	2,000	--	--	3,200	2,000	--	2,000
7440-43-9	cadmium	5.0	--	5.0	--	5.0	--	--	8.0	5.0	5.0	5.0
	calcium	--	--	--	--	--	--	--	--	--	--	--
7440-47-3	chromium (total)	100	--	100	--	100	--	--	--	--	50 (a)	50
16065-83-1	chromium(III)	100	--	100	--	100	--	--	24,000	100	--	100
18540-29-9	chromium(VI)	100	--	100	--	100	--	--	48	48	--	48
7439-89-6	iron	--	--	--	300	--	300	--	11,200	300	--	300
7439-92-1	lead	--	15	0	--	15	--	--	--	15	15	15
	magnesium	--	--	--	--	--	--	--	--	--	--	--
7439-96-5	manganese	--	--	--	50	--	50	--	2,240	50	--	50
7440-09-7	potassium	--	--	--	--	--	--	--	--	--	--	--
7782-49-2	selenium	50	--	50	--	50	--	--	80	50	--	50
7440-22-4	silver	--	--	--	100	--	100	--	80	80	--	80
7440-23-5	sodium	--	20,000	--	--	--	--	--	--	20,000	--	20,000
7439-97-6	mercury	2.0	--	2.0	--	2.0	--	--	--	2.0	2.0	2.0
CONVENTIONALS												
	total dissolved solids	--	--	--	--	--	--	--	--	--	--	--
16887-00-6	chloride	--	--	--	250,000	--	250,000	--	--	250,000	--	250,000
16984-48-8	fluoride	4,000	--	4,000	2,000	4,000	2,000	--	640	640	--	640
14797-55-8	nitrate	10,000	--	10,000	--	10,000	--	--	25,600	10,000	--	10,000
14797-65-0	nitrite	1,000	--	1,000	--	1,000	--	--	1,600	1,000	--	1,000
	sulfate	--	--	--	--	--	--	--	--	--	--	--
7664-41-7	ammonia	--	--	--	--	--	--	--	--	--	--	--
	alkalinity	--	--	--	--	--	--	--	--	--	--	--
	bicarbonate	--	--	--	--	--	--	--	--	--	--	--
	TOC	--	--	--	--	--	--	--	--	--	--	--
	pH	--	--	--	6.5 to 8.5	--	--	--	--	6.5 to 8.5	--	6.5 to 8.5
CHLORINATED PESTICIDES												
319-84-6	hexachlorocyclohexane;alpha	--	--	--	--	--	--	0.014	--	0.014	--	0.014
58-89-9	lindane (gamma-BHC)	0.20	--	0.20	--	0.20	--	0.080	4.8	0.080	0.20	0.20
319-85-7	hexachlorocyclohexane;beta-	--	--	--	--	--	--	0.049	--	0.049	--	0.049
76-44-8	heptachlor	0.40	--	0	--	0.40	--	0.019	8.0	0.019	--	0.019
319-86-8	hexachlorocyclohexane;delta-	--	--	--	--	--	--	--	--	--	--	--
309-00-2	aldrin	--	--	--	--	--	--	0.003	0.24	0.003	--	0.003
1024-57-3	heptachlor epoxide	0.20	--	0	--	0.20	--	0.005	0.10	0.005	--	0.005
57-74-9	chlordane	2.0	--	0	--	2.0	--	0.25	8.0	0.25	--	0.25
115-29-7	endosulfan	--	--	--	--	--	--	--	96	96	--	96
72-55-9	dde (4,4'-DDE)	--	--	--	--	--	--	0.26	--	0.26	--	0.26
60-57-1	dieldrin	--	--	--	--	--	--	0.005	0.80	0.005	--	0.005
72-20-8	endrin	2.0	--	2.0	--	2.0	--	--	4.8	2.0	--	2.0
72-54-8	ddd (4,4'-DDD)	--	--	--	--	--	--	0.30	--	0.30	--	0.30
50-29-3	ddt (4,4'-DDT)	--	--	--	--	--	--	0.26	8.0	0.26	0.30	0.30
72-43-5	methoxychlor	40	--	40	--	40	--	--	80	40	--	40
118-74-1	hexachlorobenzene	1.0	--	0	--	1.0	--	0.055	13	0.055	--	0.055
8001-35-2	toxaphene	3.0	--	0	--	3.0	--	0.080	--	0.080	--	0.080

**TABLE C-1
GROUNDWATER SCREENING LEVELS PROTECTIVE OF DRINKING WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

Table C-1 - Groundwater Screening Levels
Protective of Drinking Water

CAS Number	Chemical Name	Maximum Contaminant Level (MCL)				Washington State Board of Health MCLs		Method B Standard Formula Values		Preliminary Method B Groundwater as Drinking Water Cleanup Level (µg/L)	Method A Groundwater Cleanup Level (µg/L)	Screening Level (Protective of Drinking Water) (µg/L)
		MCL (µg/L)	MCL Treatment Technique Action Level (µg/L)	MCL Goal (µg/L)	MCL Secondary (µg/L)	Primary (µg/L)	Secondary (µg/L)	Carcinogen (µg/L)	Non-carcinogen (µg/L)			
POLYCHLORINATED BIPHENYLS												
12674-11-2	aroclor 1016	--	--	--	--	--	--	1.3	1.1	1.1	--	1.1
11104-28-2	aroclor 1221	--	--	--	--	--	--	--	--	--	--	--
11141-16-5	aroclor 1232	--	--	--	--	--	--	--	--	--	--	--
53469-21-9	aroclor 1242	--	--	--	--	--	--	--	--	--	--	--
12672-29-6	aroclor 1248	--	--	--	--	--	--	--	--	--	--	--
11097-69-1	aroclor 1254	--	--	--	--	--	--	0.044	0.32	0.044	--	0.044
11096-82-5	aroclor 1260	--	--	--	--	--	--	0.044	--	0.044	--	0.044
	pcb mixtures	0.50	--	0	--	--	--	0.044	--	0.044	0.10	0.10
VOLATILE ORGANIC COMPOUNDS												
75-71-8	dichlorodifluoromethane	--	--	--	--	--	--	--	1,600	1,600	--	1,600
74-87-3	chloromethane	--	--	--	--	--	--	--	--	--	--	--
74-83-9	bromomethane (methyl bromide)	--	--	--	--	--	--	--	11	11	--	11
75-00-3	chloroethane	--	--	--	--	--	--	--	--	--	--	--
75-69-4	trichlorofluoromethane	--	--	--	--	--	--	--	2,400	2,400	--	2,400
75-15-0	carbon disulfide	--	--	--	--	--	--	--	800	800	--	800
67-64-1	acetone	--	--	--	--	--	--	--	7,200	7,200	--	7,200
75-35-4	dichloroethene;1,1-	7.0	--	7.0	--	7.0	--	--	400	7.0	--	7.0
75-09-2	methylene chloride (dichloromethane)	5.0	--	0	--	5.0	--	22	48	5.0	5.0	5.0
107-13-1	acrylonitrile	--	--	--	--	--	--	0.081	320	0.081	--	0.081
1634-04-4	methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	24	--	24	20	20
156-60-5	dichloroethene;1,2-,trans	100	--	100	--	100	--	--	160	100	--	100
75-34-3	dichloroethane;1,1-	--	--	--	--	--	--	7.7	1,600	7.7	--	7.7
78-93-3	methyl ethyl ketone (2-butanone)	--	--	--	--	--	--	--	4,800	4,800	--	4,800
156-59-2	dichloroethene;1,2-,cis	70	--	70	--	70	--	--	16	16	--	16
110-54-3	hexane;n-	--	--	--	--	--	--	--	480	480	--	480
594-20-7	dichloropropane;2,2-	--	--	--	--	--	--	--	--	--	--	--
74-97-5	bromochloromethane	--	--	--	--	--	--	--	--	--	--	--
71-55-6	trichloroethane;1,1,1-	200	--	200	--	200	--	--	16,000	200	200	200
563-58-6	dichloropropene;1,1-	--	--	--	--	--	--	--	--	--	--	--
107-06-2	dichloroethane;1,2-	5.0	--	0	--	5.0	--	0.48	160	0.48	5.0	5.0
71-43-2	benzene	5.0	--	0	--	5.0	--	0.80	32	0.80	5.0	5.0
74-95-3	dibromomethane	--	--	--	--	--	--	--	--	--	--	--
75-27-4	bromodichloromethane (dichlorobromomethane)	--	80	--	0.080	0.080	--	0.71	160	0.080	--	0.080
108-10-1	methyl isobutyl ketone (4-methyl-2-pentanone)	--	--	--	--	--	--	--	640	640	--	640
108-88-3	toluene	1,000	--	1,000	--	1,000	--	--	640	640	1,000	640
10061-01-5	dichloropropene;1,3-, cis	--	--	--	--	--	--	--	--	--	--	--
591-78-6	hexanone;2-	--	--	--	--	--	--	--	--	--	--	--
142-28-9	dichloropropane;1,3-	--	--	--	--	--	--	--	--	--	--	--
127-18-4	tetrachloroethene (PCE)	5.0	--	0	--	5.0	--	21	48	5.0	5.0	5.0
106-93-4	dibromoethane; 1,2- (EDB)	0.050	--	0	--	0.050	--	0.022	--	0.022	0.01	0.01
108-90-7	chlorobenzene	100	--	100	--	100	--	--	160	100	--	100
100-41-4	ethylbenzene	700	--	700	--	70	--	--	800	70	700	70
108-38-3	xylene;m-	--	--	--	--	--	--	--	1,600	1,600	--	1,600
106-42-3	xylene;p-	--	--	--	--	--	--	--	1,600	1,600	--	1,600
100-42-5	styrene	100	--	100	--	100	--	--	1,600	100	--	100
95-47-6	xylene;o-	--	--	--	--	--	--	--	1,600	1,600	--	1,600
1330-20-7	xylene	10,000	--	10,000	--	10,000	--	--	1,600	1,600	1,000	1,000
75-25-2	bromoform	--	--	--	--	--	--	5.5	160	5.5	--	5.5
98-82-8	cumene (isopropylbenzene)	--	--	--	--	--	--	--	800	800	--	800
96-18-4	trichloropropane;1,2,3-	--	--	--	--	--	--	0.001	32	0.001	--	0.001
108-86-1	bromobenzene	--	--	--	--	--	--	--	--	--	--	--
103-65-1	propylbenzene; n-	--	--	--	--	--	--	--	800	800	--	800
95-49-8	chlorotoluene, 2-	--	--	--	--	--	--	--	--	--	--	--
108-67-8	trimethylbenzene; 1,3,5-	--	--	--	--	--	--	--	80	80	--	80
106-43-4	chlorotoluene, 4-	--	--	--	--	--	--	--	--	--	--	--
98-06-6	butylbenzene; tert-	--	--	--	--	--	--	--	800	800	--	800
95-63-6	trimethylbenzene; 1,2,4-	--	--	--	--	--	--	--	--	--	--	--
135-98-8	butylbenzene; sec-	--	--	--	--	--	--	--	800	800	--	800
99-87-6	isopropyltoluene, p-	--	--	--	--	--	--	--	--	--	--	--

**TABLE C-1
GROUNDWATER SCREENING LEVELS PROTECTIVE OF DRINKING WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

Table C-1 - Groundwater Screening Levels
Protective of Drinking Water

CAS Number	Chemical Name	Maximum Contaminant Level (MCL)				Washington State Board of Health MCLs		Method B Standard Formula Values		Preliminary Method B Groundwater as Drinking Water Cleanup Level (µg/L)	Method A Groundwater Cleanup Level (µg/L)	Screening Level (Protective of Drinking Water) (µg/L)
		MCL (µg/L)	MCL Treatment Technique Action Level (µg/L)	MCL Goal (µg/L)	MCL Secondary (µg/L)	Primary (µg/L)	Secondary (µg/L)	Carcinogen (µg/L)	Non-carcinogen (µg/L)			
541-73-1	dichlorobenzene;1,3-	--	--	--	--	--	--	--	--	--	--	
106-46-7	dichlorobenzene;1,4-	75	--	75	--	75	--	8.1	--	8.1	--	
104-51-8	butylbenzene, n-	--	--	--	--	--	--	--	--	--	--	
95-50-1	dichlorobenzene;1,2-	600	--	600	--	600	--	--	720	600	--	
96-12-8	dibromo-3-chloropropane;1,2-	0.20	--	0	--	0.20	--	0.055	1.6	0.055	--	
87-68-3	hexachlorobutadiene	--	--	--	--	--	--	0.56	8.0	0.56	--	
87-61-6	trichlorobenzene;1,2,3-	--	--	--	--	--	--	--	--	--	--	
75-01-4	vinyl chloride	2.0	--	0	--	2.0	--	0.029	24	0.029	0.20	
56-23-5	carbon tetrachloride	5.0	--	0	--	5.0	--	0.63	32	0.63	--	
67-66-3	chloroform	--	--	--	--	80	--	1.4	80	1.4	--	
79-01-6	trichloroethene (TCE)	5.0	--	0	--	5.0	--	0.54	4.0	0.54	5.0	
78-87-5	dichloropropane;1,2-	5.0	--	0	--	5.0	--	1.2	720	1.2	--	
542-75-6	dichloropropene; 1,3-, trans (1,3-dichloropropene)	--	--	--	--	--	--	0.44	240	0.44	--	
79-00-5	trichloroethane;1,1,2-	5.0	--	3.0	--	5.0	--	0.77	32	0.77	--	
124-48-1	dibromochloromethane (chlorodibromomethane)	--	--	--	--	80	--	0.52	160	0.52	--	
630-20-6	tetrachloroethane;1,1,1,2-	--	--	--	--	--	--	1.7	240	1.7	--	
79-34-5	tetrachloroethane;1,1,2,2-	--	--	--	--	--	--	0.22	160	0.22	--	
120-82-1	trichlorobenzene;1,2,4-	70	--	70	--	70	--	1.5	80	1.5	--	
SEMIVOLATILE ORGANIC COMPOUNDS												
110-86-1	pyridine	--	--	--	--	--	--	--	8.0	8.0	--	
62-75-9	nitrosodimethylamine;N-	--	--	--	--	--	--	0.0009	0.064	0.0009	--	
108-95-2	phenol	--	--	--	--	--	--	--	2,400	2,400	--	
62-53-3	aniline	--	--	--	--	--	--	7.7	56	7.7	--	
111-44-4	bis(2-chloroethyl)ether	--	--	--	--	--	--	0.040	--	0.040	--	
95-57-8	chlorophenol;2-	--	--	--	--	--	--	--	40	40	--	
100-51-6	benzyl alcohol	--	--	--	--	--	--	--	800	800	--	
95-48-7	cresol;o- (2-methylphenol)	--	--	--	--	--	--	--	400	400	--	
39638-32-9	bis(2-chloroisopropyl) ether	--	--	--	--	--	--	--	--	--	--	
	cresol; m- & p- (3&4-Methylphenol) (b)	--	--	--	--	--	--	--	400	400	--	
621-64-7	nitroso-di-n-propylamine;N-	--	--	--	--	--	--	0.013	--	0.013	--	
67-72-1	hexachloroethane	--	--	--	--	--	--	1.1	5.6	1.1	--	
98-95-3	nitrobenzene	--	--	--	--	--	--	--	16	16	--	
78-59-1	isophorone	--	--	--	--	--	--	46	1,600	46	--	
88-75-5	nitrophenol, 2-	--	--	--	--	--	--	--	--	--	--	
105-67-9	dimethylphenol;2,4-	--	--	--	--	--	--	--	160	160	--	
65-85-0	benzoic acid	--	--	--	--	--	--	--	64,000	64,000	--	
111-91-1	bis(2-chloroethoxy)methane	--	--	--	--	--	--	--	--	--	--	
120-83-2	dichlorophenol;2,4-	--	--	--	--	--	--	--	24	24	--	
106-47-8	chloroaniline;p- (4-chloroaniline)	--	--	--	--	--	--	0.22	32	0.22	--	
87-65-0	dichlorophenol;2,6-	--	--	--	--	--	--	--	--	--	--	
59-50-7	methylphenol; 4-chloro-3-	--	--	--	--	--	--	--	--	--	--	
77-47-4	hexachlorocyclopentadiene	50	--	50	--	50	--	--	48	48	--	
88-06-2	trichlorophenol;2,4,6-	--	--	--	--	--	--	4.0	8.0	4.0	--	
95-95-4	trichlorophenol;2,4,5-	--	--	--	--	--	--	--	800	800	--	
91-58-7	chloronaphthalene, 2-	--	--	--	--	--	--	--	--	--	--	
88-74-4	nitroaniline, 2-	--	--	--	--	--	--	--	160	160	--	
131-11-3	dimethyl phthalate	--	--	--	--	--	--	--	--	--	--	
606-20-2	dinitrotoluene;2,6-	--	--	--	--	--	--	0.060	16	0.060	--	
99-09-2	nitroaniline, 3-	--	--	--	--	--	--	--	--	--	--	
51-28-5	dinitrophenol;2,4-	--	--	--	--	--	--	--	32	32	--	
100-02-7	nitrophenol, 4-	--	--	--	--	--	--	--	--	--	--	
132-64-9	dibenzofuran	--	--	--	--	--	--	--	16	16	--	
121-14-2	dinitrotoluene;2,4-	--	--	--	--	--	--	0.28	32	0.28	--	
58-90-2	tetrachlorophenol;2,3,4,6-	--	--	--	--	--	--	--	480	480	--	
84-66-2	diethyl phthalate	--	--	--	--	--	--	--	13,000	13,000	--	
7005-72-3	phenylether; 4-chlorophenyl-	--	--	--	--	--	--	--	--	--	--	
100-01-6	nitroaniline, 4-	--	--	--	--	--	--	--	--	--	--	
534-52-1	methylphenol; 4,6-dinitro-2-	--	--	--	--	--	--	--	--	--	--	
86-30-6	nitrosodiphenylamine;N-	--	--	--	--	--	--	18	--	18	--	
103-33-3	azobenzene	--	--	--	--	--	--	0.80	--	0.80	--	

**TABLE C-1
GROUNDWATER SCREENING LEVELS PROTECTIVE OF DRINKING WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Maximum Contaminant Level (MCL)				Washington State Board of Health MCLs		Method B Standard Formula Values		Preliminary Method B Groundwater as Drinking Water Cleanup Level (µg/L)	Method A Groundwater Cleanup Level (µg/L)	Screening Level (Protective of Drinking Water) (µg/L)
		MCL (µg/L)	MCL Treatment Technique Action Level (µg/L)	MCL Goal (µg/L)	MCL Secondary (µg/L)	Primary (µg/L)	Secondary (µg/L)	Carcinogen (µg/L)	Non-carcinogen (µg/L)			
101-55-3	phenylether, 4-bromophenyl-	--	--	--	--	--	--	--	--	--	--	
86-74-8	carbazole	--	--	--	--	--	--	--	--	--	--	
84-74-2	di-butyl phthalate (di-n-butyl phthalate)	--	--	--	--	--	--	1,600	1,600	--	1,600	
85-68-7	butyl benzyl phthalate	--	--	--	--	--	--	46	3,200	46	46	
91-94-1	dichlorobenzidine,3,3'	--	--	--	--	--	--	0.20	--	--	0.20	
117-81-7	bis(2-ethylhexyl) phthalate	6.0	--	0	--	6.0	--	6.3	320	6.0	6.0	
117-84-0	di-n-octyl phthalate	--	--	--	--	--	--	--	160	160	160	
91-20-3	naphthalene	--	--	--	--	--	--	--	160	160	160	
91-57-6	methyl naphthalene, 2-	--	--	--	--	--	--	--	32	32	32	
90-12-0	methyl naphthalene, 1-	--	--	--	--	--	--	1.5	560	1.5	1.5	
208-96-8	acenaphthylene	--	--	--	--	--	--	--	--	--	--	
83-32-9	acenaphthene	--	--	--	--	--	--	--	960	960	960	
86-73-7	fluorene	--	--	--	--	--	--	--	640	640	640	
87-86-5	pentachlorophenol	1.0	--	0	--	1.0	--	0.22	80	0.22	0.22	
85-01-8	phenanthrene	--	--	--	--	--	--	--	--	--	--	
120-12-7	anthracene	--	--	--	--	--	--	--	4,800	4,800	4,800	
206-44-0	fluoranthene	--	--	--	--	--	--	--	640	640	640	
129-00-0	pyrene	--	--	--	--	--	--	--	480	480	480	
56-55-3	benzo[a]anthracene	--	--	--	--	--	--	0.12	--	0.12	0.12	
218-01-9	chrysene	--	--	--	--	--	--	12	--	12	12	
205-99-2	benzo[b]fluoranthene	--	--	--	--	--	--	0.12	--	0.12	0.12	
207-08-9	benzo[k]fluoranthene	--	--	--	--	--	--	1.2	--	1.2	1.2	
50-32-8	benzo[a]pyrene	0.20	--	0	--	0.20	--	0.012	--	0.012	0.10	
193-39-5	indeno[1,2,3-cd]pyrene	--	--	--	--	--	--	0.12	--	0.12	0.12	
53-70-3	dibenzo[a,h]anthracene	--	--	--	--	--	--	0.012	--	0.012	0.012	
191-24-2	benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	
	cPAH TEQ	--	--	--	--	--	--	--	--	0.10	0.10	

ARARs = applicable or relevant and appropriate requirements
 BHC = benzene hexachloride
 BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
 CAS = Chemicals Abstracts Service
 DDD = dichlorodiphenyldichloroethane
 DDE = dichlorodiphenyldichloroethylene
 DDT = dichlorodiphenyltrichloroethane

MCL = Maximum Contaminant Level
 PAH = Polycyclic Aromatic Hydrocarbon
 PCB = Polychlorinated biphenyl
 SEMI = Semivolatile
 TPH = Total Petroleum Hydrocarbon
 VOL = Volatile
 µg/L = micrograms per liter

-- = Not Available
 Note: Preliminary screening level may be adjusted upward to the practical quantitation limit (PQL) based on analytical laboratory instrument capabilities or to natural/regional background values per MTCA guidelines.
 (a) The Method A Groundwater cleanup level is 100 µg/L if no Chromium VI is present.
 (b) Screening level for m- & p-cresol is based on criteria for m-cresol (3-methylphenol), as it is more conservative than the criteria for p-cresol (4-methylphenol).

**TABLE C-2
GROUNDWATER SCREENING LEVELS PROTECTIVE OF SURFACE WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Surface Water Method B Non cancer (µg/L)	Surface Water Method B Cancer (µg/L)	Surface Water Aquatic Life Fresh/Acute 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Acute CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Acute NTR 40 CFR 131 (µg/L)	Surface Water Aquatic Life Fresh/Chronic 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Chronic CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Chronic NTR 40 CFR 131 (µg/L)	Surface Water Human Health Fresh Water CWA §304 (µg/L)	Surface Water Human Health Fresh Water NTR 40 CFR 131 (µg/L)	Screening Level (Protective of Surface Water) (µg/L)
PETROLEUM HYDROCARBONS												
	tph, diesel range organics	--	--	--	--	--	--	--	--	--	--	--
	tph, heavy oils	--	--	--	--	--	--	--	--	--	--	--
	tph, mineral oil	--	--	--	--	--	--	--	--	--	--	--
	tph: gasoline range organics, benzene present	--	--	--	--	--	--	--	--	--	--	--
	tph: gasoline range organics, no detectable benzene	--	--	--	--	--	--	--	--	--	--	--
TOTAL/DISSOLVED METALS												
7440-38-2	arsenic, inorganic	18	0.10	360	340	360	190	150	190	0.018	0.018	0.018
7440-39-3	barium and compounds	--	--	--	--	--	--	--	--	1,000	--	1,000
7440-43-9	cadmium (potable groundwater and surface water)	--	--	--	--	--	--	--	--	--	--	--
	calcium	--	--	--	--	--	--	--	--	--	--	--
7440-47-3	chromium (total)	--	--	--	--	--	--	--	--	--	--	--
16065-83-1	chromium(III)	240,000	--	176	570	550	57	74	180	--	--	57
18540-29-9	chromium(VI)	490	--	15	16	15	10	11	10	--	--	10
7439-89-6	iron	--	--	--	--	--	--	1,000	--	300	--	300
7439-92-1	lead	--	--	14	65	65	0.54	2.5	2.5	--	--	0.54
	magnesium	--	--	--	--	--	--	--	--	--	--	--
7439-96-5	manganese	--	--	--	--	--	--	--	--	--	--	--
7440-09-7	potassium	--	--	--	--	--	--	--	--	--	--	--
7782-49-2	selenium and compounds	2,700	--	20	--	20	5.0	5.0	5.0	170	--	5.0
7440-22-4	silver	26,000	--	0.32	3.2	3.4	--	--	--	--	--	0.32
	sodium	--	--	--	--	--	--	--	--	--	--	--
7439-97-6	mercury	--	--	2.1	1.4	2.1	0.012	0.77	0.012	--	0.14	0.012
CONVENTIONALS												
	total dissolved solids	--	--	--	--	--	--	--	--	--	--	--
16887-00-6	chloride	--	--	860,000	860,000	--	230,000	230,000	--	--	--	230,000
16984-48-8	fluoride	--	--	--	--	--	--	--	--	--	--	--
14797-55-8	nitrate	--	--	--	--	--	--	--	--	10,000	--	10,000
14797-65-0	nitrite	--	--	--	--	--	--	--	--	--	--	--
	sulfate	--	--	--	--	--	--	--	--	--	--	--
7664-41-7	ammonia	--	--	--	--	--	--	--	--	--	--	--
	alkalinity	--	--	--	--	--	--	--	--	--	--	--
	bicarbonate	--	--	--	--	--	--	--	--	--	--	--
	TOC	--	--	--	--	--	--	--	--	--	--	--
	pH	--	--	--	--	--	--	--	--	--	--	--
CHLORINATED PESTICIDES												
319-84-6	hexachlorocyclohexane;alpha	160	0.008	--	--	--	--	--	--	0.003	0.004	0.003
58-89-9	lindane (gamma-BHC)	6.0	0.045	2.0	0.95	2.0	0.080	--	0.080	0.98	0.019	0.019
319-85-7	hexachlorocyclohexane;beta-	--	0.028	--	--	--	--	--	--	0.009	0.014	0.009
76-44-8	heptachlor	0.12	0.0001	0.52	0.52	0.52	0.004	0.004	0.004	0.0001	0.0002	0.0001
319-86-8	hexachlorocyclohexane;delta-	--	--	--	--	--	--	--	--	0.012	--	0.012
309-00-2	aldrin	0.017	0.0001	2.5	3.0	3.0	0.002	--	--	0.00005	0.0001	0.00005
1024-57-3	heptachlor epoxide	0.003	0.0001	--	0.52	0.52	--	0.004	0.004	0.00004	0.0001	0.00004
57-74-9	chlordane	0.093	0.001	2.4	2.4	2.4	0.004	0.004	0.004	0.001	0.001	0.001
115-29-7	endosulfan	58	--	0.22	--	0.22	0.056	--	0.056	--	--	0.056
72-55-9	dde (4,4'-DDE)	--	0.0004	1.1	--	--	0.001	--	--	0.0002	0.001	0.0002
60-57-1	dieldrin	0.028	0.0001	2.5	0.24	2.5	0.002	0.056	0.002	0.0001	0.0001	0.0001
72-20-8	endrin	0.19	--	0.18	0.086	0.18	0.002	0.036	0.002	0.059	0.76	0.002
72-54-8	ddd (4,4'-DDD)	--	0.001	1.1	--	--	0.001	--	--	0.0003	0.001	0.0003
50-29-3	ddt (4,4'-DDT)	0.024	0.0004	1.1	1.1	1.1	0.001	0.001	0.001	0.0002	0.001	0.0002
72-43-5	methoxychlor	8.1	--	--	--	--	--	0.030	--	100	--	0.030
118-74-1	hexachlorobenzene	0.24	0.0005	--	--	--	--	--	--	0.0003	0.0008	0.0003
8001-35-2	toxaphene	--	0.0005	0.73	0.73	0.73	0.0002	0.0002	0.0002	0.0003	0.001	0.0002

**TABLE C-2
GROUNDWATER SCREENING LEVELS PROTECTIVE OF SURFACE WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Surface Water Method B Non cancer (µg/L)	Surface Water Method B Cancer (µg/L)	Surface Water Aquatic Life Fresh/Acute 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Acute CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Acute NTR 40 CFR 131 (µg/L)	Surface Water Aquatic Life Fresh/Chronic 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Chronic CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Chronic NTR 40 CFR 131 (µg/L)	Surface Water Human Health Fresh Water CWA §304 (µg/L)	Surface Water Human Health Fresh Water NTR 40 CFR 131 (µg/L)	Screening Level (Protective of Surface Water) (µg/L)
POLYCHLORINATED BIPHENYLS												
12674-11-2	aroclor 1016	0.006	0.003	--	--	--	--	--	0.014	--	--	0.003
	aroclor 1221	--	--	--	--	--	--	--	--	--	--	--
	aroclor 1232	--	--	--	--	--	--	--	--	--	--	--
	aroclor 1242	--	--	--	--	--	--	--	--	--	--	--
	aroclor 1248	--	--	--	--	--	--	--	--	--	--	--
11097-69-1	aroclor 1254	0.002	0.0001	--	--	--	--	--	0.014	--	--	0.0001
11096-82-5	aroclor 1260	--	--	--	--	--	--	--	0.014	--	--	0.014
	pcb mixtures	--	--	--	--	--	--	--	--	--	--	--
VOLATILE ORGANIC COMPOUNDS												
75-71-8	dichlorodifluoromethane	--	--	--	--	--	--	--	--	--	--	--
74-87-3	chloromethane	--	--	--	--	--	--	--	--	--	--	--
74-83-9	bromomethane (methyl bromide)	960	--	--	--	--	--	--	--	47	48	47
75-00-3	chloroethane	--	--	--	--	--	--	--	--	--	--	--
75-69-4	trichlorofluoromethane	--	--	--	--	--	--	--	--	--	--	--
75-15-0	carbon disulfide	--	--	--	--	--	--	--	--	--	--	--
67-64-1	acetone	--	--	--	--	--	--	--	--	--	--	--
75-35-4	dichloroethene;1,1-	23,000	--	--	--	--	--	--	--	330	0.057	0.057
75-09-2	methylene chloride (dichloromethane)	17,000	3,600	--	--	--	--	--	--	4.6	4.7	4.6
107-13-1	acrylonitrile	3,500	0.40	--	--	--	--	--	--	0.051	0.059	0.051
1634-04-4	methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	--	--	--	--	--
156-60-5	dichloroethene;1,2-,trans	32,000	--	--	--	--	--	--	--	140,000	--	32,000
75-34-3	dichloroethane;1,1-	--	--	--	--	--	--	--	--	--	--	--
78-93-3	methyl ethyl ketone (2-butanone)	--	--	--	--	--	--	--	--	--	--	--
156-59-2	dichloroethene;1,2-,cis	--	--	--	--	--	--	--	--	--	--	--
110-54-3	hexane;n-	--	--	--	--	--	--	--	--	--	--	--
594-20-7	dichloropropane;2,2-	--	--	--	--	--	--	--	--	--	--	--
74-97-5	bromochloromethane	--	--	--	--	--	--	--	--	--	--	--
71-55-6	trichloroethane;1,1,1-	930,000	--	--	--	--	--	--	--	--	--	930,000
563-58-6	dichloropropene;1,1-	--	--	--	--	--	--	--	--	--	--	--
107-06-2	dichloroethane;1,2-	13,000	59	--	--	--	--	--	--	0.38	0.38	0.38
71-43-2	benzene	2,000	23	--	--	--	--	--	--	2.2	1.2	1.2
74-95-3	dibromomethane	--	--	--	--	--	--	--	--	--	--	--
75-27-4	bromodichloromethane (dichlorobromomethane)	14,000	28	--	--	--	--	--	--	0.55	0.27	0.27
108-10-1	methyl isobutyl ketone (4-methyl-2-pentanone)	--	--	--	--	--	--	--	--	--	--	--
108-88-3	toluene	19,000	--	--	--	--	--	--	--	1,300	6,800	1,300
10061-01-5	dichloropropene;1,3-, cis	--	--	--	--	--	--	--	--	--	--	--
591-78-6	hexanone;2-	--	--	--	--	--	--	--	--	--	--	--
142-28-9	dichloropropane;1,3-	--	--	--	--	--	--	--	--	--	--	--
127-18-4	tetrachloroethene (PCE)	502	100	--	--	--	--	--	--	0.69	0.80	0.69
106-93-4	dibromoethane; 1,2- (EDB)	--	--	--	--	--	--	--	--	--	--	--
108-90-7	chlorobenzene	5,200	--	--	--	--	--	--	--	130	680	130
100-41-4	ethylbenzene	6,800	--	--	--	--	--	--	--	530	3,100	530
108-38-3	xylene;m-	--	--	--	--	--	--	--	--	--	--	--
106-42-3	xylene;p-	--	--	--	--	--	--	--	--	--	--	--
100-42-5	styrene	--	--	--	--	--	--	--	--	--	--	--
95-47-6	xylene;o-	--	--	--	--	--	--	--	--	--	--	--
1330-20-7	xylenes	--	--	--	--	--	--	--	--	--	--	--
75-25-2	bromoform	14,000	220	--	--	--	--	--	--	4.3	4.3	4.3
98-82-8	cumene (isopropylbenzene)	--	--	--	--	--	--	--	--	--	--	--
96-18-4	trichloropropane;1,2,3-	--	--	--	--	--	--	--	--	--	--	--
108-86-1	bromobenzene	--	--	--	--	--	--	--	--	--	--	--
103-65-1	propylbenzene;n-	--	--	--	--	--	--	--	--	--	--	--
95-49-8	chlorotoluene, 2-	--	--	--	--	--	--	--	--	--	--	--
108-67-8	trimethylbenzene;1,3,5-	--	--	--	--	--	--	--	--	--	--	--
106-43-4	chlorotoluene, 4-	--	--	--	--	--	--	--	--	--	--	--
98-06-6	tert-butylbenzene	--	--	--	--	--	--	--	--	--	--	--
95-63-6	trimethylbenzene;1,2,4-	--	--	--	--	--	--	--	--	--	--	--
135-98-8	sec-butylbenzene	--	--	--	--	--	--	--	--	--	--	--
99-87-6	isopropyltoluene, p-	--	--	--	--	--	--	--	--	--	--	--

**TABLE C-2
GROUNDWATER SCREENING LEVELS PROTECTIVE OF SURFACE WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Surface Water Method B Non cancer (µg/L)	Surface Water Method B Cancer (µg/L)	Surface Water Aquatic Life Fresh/Acute 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Acute CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Acute NTR 40 CFR 131 (µg/L)	Surface Water Aquatic Life Fresh/Chronic 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Chronic CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Chronic NTR 40 CFR 131 (µg/L)	Surface Water Human Health Fresh Water CWA §304 (µg/L)	Surface Water Human Health Fresh Water NTR 40 CFR 131 (µg/L)	Screening Level (Protective of Surface Water) (µg/L)
541-73-1	dichlorobenzene;1,3-	--	--	--	--	--	--	--	--	320	400	320
106-46-7	dichlorobenzene;1,4-	3,200	21	--	--	--	--	--	--	63	400	21
104-51-8	butylbenzene, n-	--	--	--	--	--	--	--	--	--	--	--
95-50-1	dichlorobenzene;1,2-	4,200	--	--	--	--	--	--	--	420	2,700	420
96-12-8	dibromo-3-chloropropane;1,2-	--	--	--	--	--	--	--	--	--	--	--
87-68-3	hexachlorobutadiene	930	30	--	--	--	--	--	--	0.44	0.44	0.44
87-61-6	trichlorobenzene;1,2,3-	--	--	--	--	--	--	--	--	--	--	--
75-01-4	vinyl chloride	6,500	3.7	--	--	--	--	--	--	0.025	2.0	0.025
56-23-5	carbon tetrachloride	550	4.9	--	--	--	--	--	--	0.23	0.25	0.23
67-66-3	chloroform	6,800	55	--	--	--	--	--	--	5.7	5.7	5.7
79-01-6	trichloroethene (TCE)	120	13	--	--	--	--	--	--	2.5	2.7	2.5
78-87-5	dichloropropane;1,2-	57,000	44	--	--	--	--	--	--	0.50	--	0.50
542-75-6	dichloropropene; 1,3-, trans (1,3-dichloropropene)	41,000	34	--	--	--	--	--	--	0.34	10	0.34
79-00-5	trichloroethane;1,1,2-	2,300	25	--	--	--	--	--	--	0.59	0.60	0.59
124-48-1	dibromochloromethane (chlorodibromomethane)	14,000	20	--	--	--	--	--	--	0.40	0.41	0.40
630-20-6	tetrachloroethane;1,1,1,2-	--	--	--	--	--	--	--	--	--	--	--
79-34-5	tetrachloroethane;1,1,2,2-	10,000	6.5	--	--	--	--	--	--	0.17	0.17	0.17
120-82-1	trichlorobenzene;1,2,4-	240	2.0	--	--	--	--	--	--	35	--	2.0
SEMIVOLATILE ORGANIC COMPOUNDS												
110-86-1	pyridine	--	--	--	--	--	--	--	--	--	--	--
62-75-9	nitrosodimethylamine;N-	800	4.9	--	--	--	--	--	--	0.001	0.001	0.001
108-95-2	phenol	560,000	--	--	--	--	--	--	--	21,000	21,000	21,000
62-53-3	aniline	--	--	--	--	--	--	--	--	--	--	--
111-44-4	bis(2-chloroethyl)ether	--	0.85	--	--	--	--	--	--	0.030	0.031	0.030
95-57-8	chlorophenol;2-	100	--	--	--	--	--	--	--	--	--	100
100-51-6	benzyl alcohol	--	--	--	--	--	--	--	--	--	--	--
95-48-7	cresol;o- (2-methylphenol)	--	--	--	--	--	--	--	--	--	--	--
39638-32-9	bis(2-chloroisopropyl) ether	--	--	--	--	--	--	--	--	1,400	1,400	1,400
	cresol; m- & p- (3&4-Methylphenol)	--	--	--	--	--	--	--	--	--	--	--
621-64-7	nitroso-di-n-propylamine;N-	--	0.84	--	--	--	--	--	--	0.005	--	0.005
67-72-1	hexachloroethane	21	1.9	--	--	--	--	--	--	1.4	1.9	1.4
98-95-3	nitrobenzene	1,800	--	--	--	--	--	--	--	17	17	17
78-59-1	isophorone	120,000	1,600	--	--	--	--	--	--	35	8.4	8.4
88-75-5	nitrophenol, 2-	--	--	--	--	--	--	--	--	--	--	--
105-67-9	dimethylphenol;2,4-	550	--	--	--	--	--	--	--	380	--	380
65-85-0	benzoic acid	--	--	--	--	--	--	--	--	--	--	--
111-91-1	bis(2-chloroethoxy)methane	--	--	--	--	--	--	--	--	--	--	--
120-83-2	dichlorophenol;2,4-	190	--	--	--	--	--	--	--	77	93	77
106-47-8	chloroaniline;p- (4-chloroaniline)	--	--	--	--	--	--	--	--	--	--	--
87-65-0	dichlorophenol;2,6-	--	--	--	--	--	--	--	--	--	--	--
59-50-7	methylphenol; 4-chloro-3-	--	--	--	--	--	--	--	--	--	--	--
77-47-4	hexachlorocyclopentadiene	3,600	--	--	--	--	--	--	--	40	240	40
88-06-2	trichlorophenol;2,4,6-	17	3.9	--	--	--	--	--	--	1.4	2.1	1.4
95-95-4	trichlorophenol;2,4,5-	--	--	--	--	--	--	--	--	1,800	--	1,800
91-58-7	chloronaphthalene, 2-	--	--	--	--	--	--	--	--	--	--	--
88-74-4	nitroaniline, 2-	--	--	--	--	--	--	--	--	--	--	--
131-11-3	dimethyl phthalate	--	--	--	--	--	--	--	--	270,000	310,000	270,000
606-20-2	dinitrotoluene;2,6-	--	--	--	--	--	--	--	--	--	--	--
99-09-2	nitroaniline, 3-	--	--	--	--	--	--	--	--	--	--	--
51-28-5	dinitrophenol;2,4-	3,500	--	--	--	--	--	--	--	69	70	69
100-02-7	nitrophenol, 4-	--	--	--	--	--	--	--	--	--	--	--
132-64-9	dibenzofuran	--	--	--	--	--	--	--	--	--	--	--
121-14-2	dinitrotoluene;2,4-	1,400	5.5	--	--	--	--	--	--	0.11	0.11	0.11
58-90-2	tetrachlorophenol;2,3,4,6-	--	--	--	--	--	--	--	--	--	--	--
84-66-2	diethyl phthalate	28,000	--	--	--	--	--	--	--	17,000	23,000	17,000
7005-72-3	phenylether; 4-chlorophenyl-	--	--	--	--	--	--	--	--	--	--	--
100-01-6	nitroaniline, 4-	--	--	--	--	--	--	--	--	--	--	--
534-52-1	methylphenol; 4,6-dinitro-2-	--	--	--	--	--	--	--	--	--	--	--
86-30-6	nitrosodiphenylamine;N-	--	9.4	--	--	--	--	--	--	3.3	5.0	3.3
103-33-3	azobenzene	--	--	--	--	--	--	--	--	--	--	--

**TABLE C-2
GROUNDWATER SCREENING LEVELS PROTECTIVE OF SURFACE WATER
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Surface Water Method B Non cancer (µg/L)	Surface Water Method B Cancer (µg/L)	Surface Water Aquatic Life Fresh/Acute 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Acute CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Acute NTR 40 CFR 131 (µg/L)	Surface Water Aquatic Life Fresh/Chronic 173-201A WAC (µg/L)	Surface Water Aquatic Life Fresh/Chronic CWA §304 (µg/L)	Surface Water Aquatic Life Fresh/Chronic NTR 40 CFR 131 (µg/L)	Surface Water Human Health Fresh Water CWA §304 (µg/L)	Surface Water Human Health Fresh Water NTR 40 CFR 131 (µg/L)	Screening Level (Protective of Surface Water) (µg/L)
101-55-3	phenylether; 4-bromophenyl-	--	--	--	--	--	--	--	--	--	--	--
86-74-8	carbazole	--	--	--	--	--	--	--	--	--	--	--
84-74-2	di-butyl phthalate (di-n-butyl phthalate)	2,900	--	--	--	--	--	--	--	2,000	2,700	2,000
85-68-7	butyl benzyl phthalate	1,300	8.3	--	--	--	--	--	--	1,500	--	8.3
91-94-1	dichlorobenzidine;3,3'-	--	0.046	--	--	--	--	--	--	0.021	0.040	0.021
117-81-7	bis(2-ethylhexyl) phthalate	400	3.6	--	--	--	--	--	--	1.2	1.8	1.2
117-84-0	di-n-octyl phthalate	--	--	--	--	--	--	--	--	--	--	--
91-20-3	naphthalene	4,700	--	--	--	--	--	--	--	--	--	4,700
91-57-6	methyl naphthalene;2-	--	--	--	--	--	--	--	--	--	--	--
90-12-0	methyl naphthalene;1-	--	--	--	--	--	--	--	--	--	--	--
208-96-8	acenaphthylene	--	--	--	--	--	--	--	--	--	--	--
83-32-9	acenaphthene	650	--	--	--	--	--	--	--	670	--	650
86-73-7	fluorene	3,500	--	--	--	--	--	--	--	1,100	1,300	1,100
87-86-5	pentachlorophenol	1,200	1.5	20	19	20	13	15	13	0.27	0.28	0.27
85-01-8	phenanthrene	--	--	--	--	--	--	--	--	--	--	--
120-12-7	anthracene	26,000	--	--	--	--	--	--	--	8,300	9,600	8,300
206-44-0	fluoranthene	86	--	--	--	--	--	--	--	130	300	86
129-00-0	pyrene	2,600	--	--	--	--	--	--	--	830	960	830
56-55-3	benzo[a]anthracene	--	0.30	--	--	--	--	--	--	0.004	0.003	0.003
218-01-9	chrysene	--	30	--	--	--	--	--	--	0.004	0.003	0.003
205-99-2	benzo[b]fluoranthene	--	0.30	--	--	--	--	--	--	0.004	0.003	0.003
207-08-9	benzo[k]fluoranthene	--	3.0	--	--	--	--	--	--	0.004	0.003	0.003
50-32-8	benzo[a]pyrene	--	0.030	--	--	--	--	--	--	0.004	0.003	0.003
193-39-5	indeno[1,2,3-cd]pyrene	--	0.30	--	--	--	--	--	--	0.004	0.003	0.003
53-70-3	dibenzo[a,h]anthracene	--	0.030	--	--	--	--	--	--	0.004	0.003	0.003
191-24-2	benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--
	cPAH TEQ	--	--	--	--	--	--	--	--	--	--	--

BTEX = benzene, toluene, ethylbenzene, xylenes
 CAS = Chemicals Abstracts Service
 DDD = dichlorodiphenyldichloroethane
 DDE = dichlorodiphenyldichloroethylene
 DDT = dichlorodiphenyltrichloroethane
 µg/L = micrograms per liter

MTCA = Model Toxics Control Act
 PAH = polycyclic aromatic hydrocarbon
 PCB = polychlorinated biphenyl
 SEMI = Semivolatile
 TPH = total petroleum hydrocarbon
 VOL = volatile

-- = Not Available

Note: Preliminary screening level may be adjusted upward to the practical quantitation limit (PQL) based on analytical laboratory instrument capabilities or natural/regional background values based on MTCA guidelines.

**TABLE C-3
REPORTING LIMIT, QUANTITATION LIMIT, AND SCREENING LEVEL EVALUATION - GROUNDWATER ANALYSIS
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Screening Level	Screening Level	Background Concentration (Natural or Regional as noted) (µg/L)	ALS Global		Groundwater Screening Level (µg/L)
		Groundwater Protective of Drinking Water (Table C-1) (µg/l)	Groundwater Protective of Surface Water (Table C-2) (µg/L)		Reporting Limit (µg/L)	Quantitation Limit (µg/L)	
PETROLEUM HYDROCARBONS							
	tph, diesel range organics	500	--		130	119	500
	tph, heavy oils	500	--		250	109	500
	tph, mineral oil	500	--		250	109	500
	tph: gasoline range organics, benzene present	800	--		50.0	29.3	800
	tph: gasoline range organics, no detectable benzene	1,000	--		50.0	29.3	1,000
TOTAL/DISSOLVED METALS							
7440-38-2	arsenic, inorganic	5.0	0.018	10.7 (c)	1.00	0.45	0.45
7440-39-3	barium and compounds	2,000	1,000		1.00	0.67	1,000
7440-43-9	cadmium (potable groundwater and surface water)	5.0	--		1.00	0.36	5.0
	calcium	--	--		50.0	10.6	--
7440-47-3	chromium (total)	50	--		2.00	0.29	50
16065-83-1	chromium(III)	100	57		--	--	57
18540-29-9	chromium(VI)	48	10		10.0	5.40	10
7439-89-6	iron	300	300		50.0	17.3	300
7439-92-1	lead	15	0.54		1.00	0.28	0.54
	magnesium	--	--		50.0	27.4	--
7439-96-5	manganese	50	--		2.00	0.34	50
7440-09-7	potassium	--	--		50	6.93	--
7782-49-2	selenium and compounds	50	5.0		4.00	3.41	5.0
7440-22-4	silver	80	0.32		1.00	0.20	0.32
	sodium	20,000	--		50.0	32.0	20,000
7439-97-6	mercury	2.0	0.012		0.20	0.11	0.11
CONVENTIONALS							
	total dissolved solids	--	--		5,000	5,000	--
16887-00-6	chloride	250,000	230,000		92.0	92.0	230,000
16984-48-8	fluoride	640	--		160	160	640
14797-55-8	nitrate	10,000	10,000		153	150	10,000
14797-65-0	nitrite	1,000	--		142.6	143	1,000
	sulfate	--	--		260	260	--
7664-41-7	ammonia	--	--		10.0	10.0	--
	alkalinity	--	--		15,000	15,000	--
	bicarbonate	--	--		15,000	15,000	--
	TOC	--	--		5,000	5,000	--
	pH	6.5 to 8.5	--		--	--	6.5 to 8.5
CHLORINATED PESTICIDES							
319-84-6	hexachlorocyclohexane;alpha	0.014	0.003		0.01	0.01	0.01
58-89-9	lindane (gamma-BHC)	0.20	0.019		0.01	0.01	0.019
319-85-7	hexachlorocyclohexane;beta-	0.049	0.009		0.01	0.01	0.01
76-44-8	heptachlor	0.019	0.0001		0.01	0.01	0.01
319-86-8	hexachlorocyclohexane;delta-	--	0.012		0.01	0.01	0.012
309-00-2	aldrin	0.003	0.00005		0.01	0.01	0.01
1024-57-3	heptachlor epoxide	0.005	0.00004		0.01	0.01	0.01
57-74-9	chlordane	0.25	0.001		0.20	0.20	0.20
115-29-7	endosulfan	96	0.056		0.01	0.01	0.056
72-55-9	dde (4,4'-DDE)	0.26	0.0002		0.01	0.01	0.01
60-57-1	dieldrin	0.005	0.0001		0.01	0.01	0.01
72-20-8	endrin	2.0	0.002		0.01	0.01	0.01
72-54-8	ddd (4,4'-DDD)	0.30	0.0003		0.01	0.01	0.01
50-29-3	ddt (4,4'-DDT)	0.30	0.0002		0.01	0.01	0.01
72-43-5	methoxychlor	40	0.030		0.01	0.01	0.030
118-74-1	hexachlorobenzene	0.055	0.0003		0.01	0.01	0.01
8001-35-2	toxaphene	0.080	0.0002		0.50	0.50	0.50

TABLE C-3
REPORTING LIMIT, QUANTITATION LIMIT, AND SCREENING LEVEL EVALUATION - GROUNDWATER ANALYSIS
CLOSED CITY OF YAKIMA LANDFILL SITE

CAS Number	Chemical Name	Screening Level	Screening Level	Background Concentration (Natural or Regional as noted) (µg/L)	ALS Global		Groundwater Screening Level (µg/L)
		Groundwater Protective of Drinking Water (Table C-1) (µg/l)	Groundwater Protective of Surface Water (Table C-2) (µg/L)		Reporting Limit (µg/L)	Quantitation Limit (µg/L)	
POLYCHLORINATED BIPHENYLS							
12674-11-2	aroclor 1016	1.1	0.003		0.005	0.005	0.005
	aroclor 1221	--	--		0.01	0.01	--
	aroclor 1232	--	--		0.005	0.005	--
	aroclor 1242	--	--		0.005	0.005	--
	aroclor 1248	--	--		0.005	0.005	--
11097-69-1	aroclor 1254	0.044	0.0001		0.005	0.005	0.005
11096-82-5	aroclor 1260	0.044	0.014		0.005	0.005	0.014
	pcb mixtures	0.10	--		--	--	0.10
VOLATILE ORGANIC COMPOUNDS (VOCs)							
75-71-8	dichlorodifluoromethane	1,600	--		2.00	0.094	1,600
74-87-3	chloromethane	--	--		2.00	0.23	--
74-83-9	bromomethane (methyl bromide)	11	47		2.00	0.14	11
75-00-3	chloroethane	--	--		2.00	0.116	--
75-69-4	trichlorofluoromethane	2,400	--		2.00	0.045	2,400
75-15-0	carbon disulfide	800	--		0.10	0.0542	800
67-64-1	acetone	7,200	--		25.0	0.68	7,200
75-35-4	dichloroethene;1,1-	7.0	0.057		2.00	0.014	0.057
75-09-2	methylene chloride (dichloromethane)	5.0	4.6		5.00	0.68	4.6
107-13-1	acrylonitrile	0.081	0.051		10.0	0.0572	0.0572
1634-04-4	methyl tert-butyl ether (MTBE)	20	--		2.00	0.0343	20
156-60-5	dichloroethene;1,2-,trans	100	32,000		2.00	0.097	100
75-34-3	dichloroethane;1,1-	7.7	--		2.00	0.030	7.7
78-93-3	methyl ethyl ketone (2-butanone)	4,800	--		10.0	1.41	4,800
156-59-2	dichloroethene;1,2-,cis	16	--		2.00	0.068	16
110-54-3	hexane;n-	480	--		2.00	0.618	480
594-20-7	dichloropropane;2,2-	--	--		2.00	0.041	--
74-97-5	bromochloromethane	--	--		2.00	0.115	--
71-55-6	trichloroethane;1,1,1-	200	930,000		2.00	0.059	200
563-58-6	dichloropropene;1,1-	--	--		2.00	0.067	--
107-06-2	dichloroethane;1,2-	5.0	0.38		2.00	0.014	0.38
71-43-2	benzene	5.0	1.2		2.00	0.028	1.2
74-95-3	dibromomethane	--	--		2.00	0.071	--
75-27-4	bromodichloromethane (dichlorobromomethane)	0.080	0.27		2.00	0.059	0.080
108-10-1	methyl isobutyl ketone (4-methyl-2-pentanone)	640	--		10.0	0.341	640
108-88-3	toluene	640	1,300		2.00	0.015	640
10061-01-5	dichloropropene;1,3-, cis	--	--		2.00	0.048	--
591-78-6	hexanone;2-	--	--		10.0	0.94	--
142-28-9	dichloropropane;1,3-	--	--		2.00	0.066	--
127-18-4	tetrachloroethene (PCE)	5.0	0.69		2.00	0.023	0.69
106-93-4	dibromoethane; 1,2- (EDB)	0.010	--		0.01	0.01	0.01
108-90-7	chlorobenzene	100	130		2.00	0.024	100
100-41-4	ethylbenzene	70	530		2.00	0.029	70
108-38-3	xylene;m-	1,600	--		4.00	0.11	1,600
106-42-3	xylene;p-	1,600	--		4.00	0.11	1,600
100-42-5	styrene	100	--		2.00	0.020	100
95-47-6	xylene;o-	1,600	--		2.00	0.069	1,600
1330-20-7	xylenes	1,000	--		4.00	0.11	1,000
75-25-2	bromoform	5.5	4.3		2.00	0.053	4.3
98-82-8	cumene (isopropylbenzene)	800	--		2.00	0.0381	800
96-18-4	trichloropropane;1,2,3-	0.001	--		2.00	0.023	0.023
108-86-1	bromobenzene	--	--		2.00	0.041	--
103-65-1	propylbenzene;n-	800	--		2.00	0.036	800
95-49-8	chlorotoluene, 2-	--	--		2.00	0.032	--
108-67-8	trimethylbenzene;1,3,5-	80	--		2.00	0.041	80
106-43-4	chlorotoluene, 4-	--	--		2.00	0.040	--
98-06-6	t-butylbenzene	800	--		2.00	0.051	800
95-63-6	trimethylbenzene;1,2,4-	--	--		2.00	0.054	--
135-98-8	s-butylbenzene	800	--		2.00	0.019	800
99-87-6	isopropyltoluene, p-	--	--		2.00	0.035	--

TABLE C-3
REPORTING LIMIT, QUANTITATION LIMIT, AND SCREENING LEVEL EVALUATION - GROUNDWATER ANALYSIS
CLOSED CITY OF YAKIMA LANDFILL SITE

CAS Number	Chemical Name	Screening Level	Screening Level	Background Concentration (Natural or Regional as noted) (µg/L)	ALS Global		Groundwater Screening Level (µg/L)
		Groundwater Protective of Drinking Water (Table C-1) (µg/l)	Groundwater Protective of Surface Water (Table C-2) (µg/L)		Reporting Limit (µg/L)	Quantitation Limit (µg/L)	
541-73-1	dichlorobenzene;1,3-	--	320		2.00	0.0413	320
106-46-7	dichlorobenzene;1,4-	8.1	21		2.00	0.045	8.1
104-51-8	butylbenzene, n-	--	--		2.00	0.053	--
95-50-1	dichlorobenzene;1,2-	600	420		2.00	0.028	420
96-12-8	dibromo-3-chloropropane;1,2-	0.055	--		10.0	0.0997	0.0997
87-68-3	hexachlorobutadiene	0.56	0.44		0.01	0.01	0.44
87-61-6	trichlorobenzene;1,2,3-	--	--		2.00	0.045	--
75-01-4	vinyl chloride	0.20	0.025		0.031	0.0314	0.031
56-23-5	carbon tetrachloride	0.63	0.23		0.10	0.025	0.23
67-66-3	chloroform	1.4	5.7		0.10	0.10	1.4
79-01-6	trichloroethene (TCE)	5.0	2.5		0.02	0.020	2.5
78-87-5	dichloropropane;1,2-	1.2	0.50		0.10	0.063	0.50
542-75-6	dichloropropene; 1,3-, trans (1,3-dichloropropene)	0.44	0.34		0.10	0.0576	0.34
79-00-5	trichloroethane;1,1,2-	0.77	0.59		0.10	0.052	0.59
124-48-1	dibromochloromethane (chlorodibromomethane)	0.52	0.40		0.10	0.074	0.40
630-20-6	tetrachloroethane;1,1,1,2-	1.7	--		0.10	0.087	1.7
79-34-5	tetrachloroethane;1,1,2,2-	0.22	0.17		0.10	0.029	0.17
120-82-1	trichlorobenzene;1,2,4-	1.5	2.0		0.10	0.047	1.5
SEMIVOLATILE ORGANIC COMPOUNDS							
110-86-1	pyridine	8.0	--		2.00	2.00	8.0
62-75-9	nitrosodimethylamine;N-	0.0009	0.0007		2.00	1.51	1.51
108-95-2	phenol	2,400	21,000		2.00	1.05	2,400
62-53-3	aniline	7.7	--		2.00	2.00	7.7
111-44-4	bis(2-chloroethyl)ether	0.040	0.030		2.00	0.94	0.94
95-57-8	chlorophenol;2-	40	100		2.00	0.85	40
100-51-6	benzyl alcohol	800	--		2.00	1.03	800
95-48-7	cresol;o- (2-methylphenol)	400	--		2.00	1.29	400
39638-32-9	bis(2-chloroisopropyl) ether	--	1,400		2.00	0.62	1,400
	cresol; m- & p- (3&4-Methylphenol) (b)	400	--		2.00	0.810	400
621-64-7	nitroso-di-n-propylamine;N-	0.013	0.005		2.00	2.00	2.0
67-72-1	hexachloroethane	1.1	1.4		2.00	2.00	2.0
98-95-3	nitrobenzene	16	17		2.00	1.19	16
78-59-1	isophorone	46	8.4		2.00	1.17	8.4
88-75-5	nitrophenol, 2-	--	--		2.00	1.14	--
105-67-9	dimethylphenol;2,4-	160	380		2.00	0.87	160
65-85-0	benzoic acid	64,000	--		10.0	2.44	64,000
111-91-1	bis(2-chloroethoxy)methane	--	--		2.00	1.05	--
120-83-2	dichlorophenol;2,4-	24	77		2.00	0.79	24
106-47-8	chloroaniline;p- (4-chloroaniline)	0.22	--		2.00	1.89	1.89
87-65-0	dichlorophenol;2,6-	--	--		2.00	0.75	--
59-50-7	methylphenol; 4-chloro-3-	--	--		2.00	1.19	--
77-47-4	hexachlorocyclopentadiene	48	40		2.00	2.00	40
88-06-2	trichlorophenol;2,4,6-	4.0	1.4		2.00	0.90	1.4
95-95-4	trichlorophenol;2,4,5-	800	1,800		2.00	1.53	800
91-58-7	chloronaphthalene, 2-	--	--		2.00	0.90	--
88-74-4	nitroaniline, 2-	160	--		2.00	0.76	160
131-11-3	dimethyl phthalate	--	270,000		2.00	0.69	270,000
606-20-2	dinitrotoluene;2,6-	0.060	--		2.00	1.82	1.82
99-09-2	nitroaniline, 3-	--	--		5.00	1.35	--
51-28-5	dinitrophenol;2,4-	32	69		10.0	2.93	32
100-02-7	nitrophenol, 4-	--	--		2.00	2.00	--
132-64-9	dibenzofuran	16	--		2.00	0.51	16
121-14-2	dinitrotoluene;2,4-	0.28	0.11		2.00	0.78	0.78
58-90-2	tetrachlorophenol;2,3,4,6-	480	--		2.00	1.06	480
84-66-2	diethyl phthalate	13,000	17,000		2.00	0.80	13,000
7005-72-3	phenylether; 4-chlorophenyl-	--	--		2.00	0.74	--
100-01-6	nitroaniline, 4-	--	--		2.00	2.00	--
534-52-1	methylphenol; 4,6-dinitro-2-	--	--		2.00	2.00	--
86-30-6	nitrosodiphenylamine;N-	18	3.3		2.00	0.92	3.3
103-33-3	azobenzene	0.80	--		2.00	1.63	1.63

TABLE C-3
REPORTING LIMIT, QUANTITATION LIMIT, AND SCREENING LEVEL EVALUATION - GROUNDWATER ANALYSIS
CLOSED CITY OF YAKIMA LANDFILL SITE

CAS Number	Chemical Name	Screening Level	Screening Level	Background Concentration (Natural or Regional as noted) (µg/L)	ALS Global		Groundwater Screening Level (µg/L)
		Groundwater Protective of Drinking Water (Table C-1) (µg/l)	Groundwater Protective of Surface Water (Table C-2) (µg/L)		Reporting Limit (µg/L)	Quantitation Limit (µg/L)	
101-55-3	phenylether; 4-bromophenyl-	--	--		2.00	0.79	--
86-74-8	carbazole	--	--		2.00	1.66	--
84-74-2	di-butyl phthalate	1,600	2,000		2.00	0.83	1,600
85-68-7	butyl benzyl phthalate	46	8.3		2.00	0.67	8.3
91-94-1	dichlorobenzidine;3,3'-	0.20	0.021		2.00	2.00	2.0
117-81-7	bis(2-ethylhexyl) phthalate	6.0	1.2		2.00	0.81	1.2
117-84-0	di-n-octyl phthalate	160	--		2.00	0.87	160
91-20-3	naphthalene	160	4,700		0.02	0.0115	160
91-57-6	methyl naphthalene;2-	32	--		0.02	0.0131	32
90-12-0	methyl naphthalene;1-	1.5	--		0.02	0.0098	1.5
208-96-8	acenaphthylene	--	--		0.02	0.0296	--
83-32-9	acenaphthene	960	650		0.02	0.0258	650
86-73-7	fluorene	640	1,100		0.02	0.0421	640
87-86-5	pentachlorophenol	0.22	0.27		0.50	0.232	0.23
85-01-8	phenanthrene	--	--		0.02	0.0224	--
120-12-7	anthracene	4,800	8,300		0.02	0.0273	4,800
206-44-0	fluoranthene	640	86		0.02	0.0133	86
129-00-0	pyrene	480	830		0.02	0.0113	480
56-55-3	benzo[a]anthracene	0.12	0.003		0.02	0.00940	0.00940
218-01-9	chrysene	12	0.003		0.02	0.00940	0.00940
205-99-2	benzo[b]fluoranthene	0.12	0.003		0.02	0.00730	0.00730
207-08-9	benzo[k]fluoranthene	1.2	0.003		0.02	0.0237	0.0237
50-32-8	benzo[a]pyrene	0.10	0.003		0.02	0.0104	0.0104
193-39-5	indeno[1,2,3-cd]pyrene	0.12	0.003		0.02	0.0164	0.0164
53-70-3	dibenzo[a,h]anthracene	0.012	0.003		0.02	0.0127	0.0127
191-24-2	benzo(g,h,i)perylene	--	--		0.02	0.0166	--
	cPAH TEQ	0.10	--		--	--	0.10

CAS = Chemicals Abstracts Service
 DDD = dichlorodiphenyldichloroethane
 DDE = dichlorodiphenyldichloroethylene
 DDT = dichlorodiphenyltrichloroethane
 µg/L = micrograms per liter
 PCB = polychlorinated biphenyl
 PQL = practical quantitation limit

PSL = preliminary screening level
 RL = reporting limit
 SEMI = semivolatile
 SIM = selected ion monitoring
 TPH = total petroleum hydrocarbon
 VOL = volatile

-- = Not Available

(a) Method A groundwater cleanup level is 100 µg/L if no chromium VI is present.

(b) Screening level for m- & p-cresol based on criteria for m-cresol (3-methylphenol), as it is more conservative than the criteria for p-cresol (4-methylphenol).

(c) Represents the proposed (draft) natural background value for arsenic under consideration by Ecology (June 2010).

**TABLE C-4
SOIL SCREENING LEVELS
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Groundwater Screening Level (Table C-3) (µg/L)	Leaching to GW Model Inputs				Protection of GW (3-Phase Model) mg/kg	SOIL - Direct Contact Pathway (Ingestion Only) Method B: Unrestricted Land Use Standard Formula Values		Method B Preliminary Soil Cleanup Level (mg/kg)	Background Soil Metals Concentrations Statewide (mg/kg) 90 percentile value (a)	Method A Soil Unrestricted Land Use (mg/kg)	ALS Global		
			Koc	Kd	Hcc	S		Carcinogen (mg/kg)	Non-carcinogen (mg/kg)				Reporting Limit (mg/kg)	Quantitation Limit (mg/kg)	Screening Level (mg/kg)
			L/kg @ pH=6.8	L/kg # @ pH 6.8 for metals	unitless	mg/l									
PETROLEUM HYDROCARBONS															
	TPH, diesel-range organics	500	--	--	--	--	--	--	--	--	--	2,000	25	11.8	2,000
	TPH, heavy oils	500	--	--	--	--	--	--	--	--	--	2,000	50	22.9	2,000
	TPH, mineral oil	500	--	--	--	--	--	--	--	--	--	4,000	50	22.9	4,000
	TPH, gasoline-range organics, benzene present	800	--	--	--	--	--	--	--	--	--	30	3	1.46	30
	TPH, gasoline-range organics, no detectable benzene	1,000	--	--	--	--	--	--	--	--	--	100	3	1.46	100
METALS															
7440-38-2	arsenic	0.45	--	29	0	--	0.26	0.67	24	0.26	7.0	20	1	0.730	20
7440-39-3	barium	1,000	--	41	0	--	824	--	16,000	824	--	--	0.5	0.140	824 (b)
7440-43-9	cadmium	5.0	--	6.7	0	--	0.69	--	--	0.69	1.0	2.0	0.5	0.225	2.0
	calcium	--	--	--	--	--	--	--	--	--	--	--	50.0	22.4	--
7440-47-3	chromium (total)	50	--	1,000	0	--	1,000	--	--	1,000	42	see Cr III or Cr VI	0.5	0.37	see Cr III or Cr VI
16065-83-1	chromium(III)	57	--	1,800,000	0	--	1,000,000	--	120,000	120,000	--	2,000	0.5	0.37	2,000
18540-29-9	chromium(VI)	10	--	19	0	--	3.8	--	240	3.8	--	19	5	2.70	19
7439-89-6	iron	300	--	25	0	--	151	--	56,000	151	43,100	--	50	33.6	151 (b)
7439-92-1	lead	0.54	--	10,000	0	--	108	--	--	108	17	250	0.5	0.235	250
	magnesium	--	--	--	--	--	--	--	--	--	--	--	50	27.9	--
7439-96-5	manganese	50	--	--	--	--	--	--	11,000	11,000	1,100	--	0.5	0.290	11,000
7440-09-7	potassium	--	--	--	--	--	--	--	--	--	--	--	50	17.8	--
7782-49-2	selenium	5.0	--	5	0	--	0.52	--	400	0.52	--	--	5	3.21	400
7440-22-4	silver	0.32	--	8.3	0	--	0.054	--	400	0.054	--	--	0.5	0.230	400
7440-23-5	sodium	20,000	--	--	--	--	--	--	--	--	--	--	50	26	--
7439-97-6	mercury	0.11	--	52	0.47	--	0.11	--	--	0.11	0.070	2.0	0.02	0.00407	2.0
CONVENTIONALS															
	chloride	230,000	--	--	--	--	--	--	--	--	--	--	1.0	0.92	--
16984-48-8	fluoride	640	--	--	--	--	--	--	3,200	3,200	--	--	1	NA	3,200
14797-55-8	nitrate	10,000	--	--	--	--	--	--	130,000	130,000	--	--	3	NA	130,000
14797-65-0	nitrite	1,000	--	--	--	--	--	--	8,000	8,000	--	--	1	NA	8,000
	sulfate	--	--	--	--	--	--	--	--	--	--	--	2.0	2.0	--
7664-41-7	ammonia	--	--	--	--	--	--	--	--	--	--	--	0.5	0.5	--
	TOC	--	--	--	--	--	--	--	--	--	--	--	5	5	--
	pH	6.5 to 8.5	--	--	--	--	--	--	--	--	--	--	1	1	--
CHLORINATED PESTICIDES															
319-84-6	hexachlorocyclohexane;alpha	0.010	1,800	1.8	0.0004	2.0	0.0004	0.16	--	0.0004	--	--	0.005	0.005	0.16
58-89-9	lindane (gamma-BHC)	0.019	1,400	1.4	0.0006	6.8	0.001	--	24	0.001	--	0.010	0.005	0.005	0.010
319-85-7	hexachlorocyclohexane;beta-	0.010	2,100	2.1	0.00003	0.24	0.0005	0.56	--	0.0005	--	--	0.005	0.005	0.56
76-44-8	heptachlor	0.010	9,500	9.5	0.045	0.18	0.002	0.22	40	0.002	--	--	0.005	0.005	0.22
319-86-8	hexachlorocyclohexane;delta-	0.012	--	--	--	--	--	--	--	--	--	--	0.005	0.005	--
309-00-2	aldrin	0.010	49,000	49	0.007	0.18	0.010	0.059	2.4	0.010	--	--	0.005	0.005	0.059
1024-57-3	heptachlor epoxide	0.010	83,000	83	0.0004	0.20	0.017	0.11	1.0	0.017	--	--	0.005	0.005	0.11
57-74-9	chlordane	0.20	51,000	51	0.002	0.056	0.21	2.9	40	0.21	--	--	0.1	0.1	2.9
115-29-7	endosulfan	0.056	2,040	2	0.0005	0.51	0.003	--	480	0.003	--	--	0.005	0.005	0.005 (b)
72-55-9	dde (4,4'-DDE)	0.010	86,000	86	0.0009	0.12	0.017	2.9	--	0.017	--	--	0.005	0.005	2.9
60-57-1	dieldrin	0.010	26,000	26	0.0006	0.20	0.005	0.063	4.0	0.005	--	--	0.005	0.005	0.063
72-20-8	endrin	0.010	11,000	11	0.0003	0.25	0.002	--	24	0.002	--	--	0.005	0.005	24
72-54-8	ddd (4,4'-DDD)	0.010	46,000	46	0.0002	0.090	0.009	4.2	--	0.009	--	--	0.005	0.005	0.009 (b)
50-29-3	ddt (4,4'-DDT)	0.010	680,000	680	0.0003	0.025	0.14	2.9	40	0.14	--	3.0	0.005	0.005	3.0
72-43-5	methoxychlor	0.030	80,000	80	0.0006	0.045	0.048	--	400	0.048	--	--	0.005	0.005	400
8001-35-2	toxaphene	0.50	96,000	96	0.0002	0.74	0.96	0.91	--	0.91	--	--	0.25	0.25	0.91

**TABLE C-4
SOIL SCREENING LEVELS
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Groundwater Screening Level (Table C-3) (µg/L)	Leaching to GW Model Inputs				Protection of GW (3-Phase Model) mg/kg	SOIL - Direct Contact Pathway (Ingestion Only) Method B: Unrestricted Land Use Standard Formula Values		Method B Preliminary Soil Cleanup Level (mg/kg)	Background Soil Metals Concentrations Statewide (mg/kg) 90 percentile value (a)	Method A Soil Unrestricted Land Use (mg/kg)	ALS Global		
			Koc	Kd	Hcc	S		Carcinogen (mg/kg)	Non-carcinogen (mg/kg)				Reporting Limit (mg/kg)	Quantitation Limit (mg/kg)	Screening Level (mg/kg)
			L/kg @ pH=6.8	L/kg # @ pH 6.8 for metals	unitless	mg/l									
POLYCHLORINATED BIPHENYLS															
12674-11-2	aroclor 1016	0.005	107,000	107	0.017	0.57	0.011	14	5.6	0.011	--	--	0.01	0.01	5.6
11104-28-2	aroclor 1221	--	--	--	--	--	--	--	--	--	--	--	0.02	0.02	--
11141-16-5	aroclor 1232	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01	--
53469-21-9	aroclor 1242	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01	--
12672-29-6	aroclor 1248	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01	--
11097-69-1	aroclor 1254	0.005	98,000	98	0.030	0.052	0.010	0.50	1.6	0.010	--	--	0.01	0.01	0.50
11096-82-5	aroclor 1260	0.014	820,000	820	0	--	0.23	0.50	--	0.23	--	--	0.01	0.01	0.50
	pcb mixtures	0.1	310,000	310	0	--	--	0.50	--	0.50	--	1.0	--	--	1.0
VOLATILE ORGANIC COMPOUNDS															
75-71-8	dichlorodifluoromethane	1,600	58	0.058	4.1	280	20	--	16,000	20	--	--	0.01	0.0011	16,000
74-87-3	chloromethane	--	35	0.035	0.98	8,200	--	--	--	--	--	--	0.01	0.000665	--
75-01-4	vinyl chloride	0.031	19	0.019	1.1	6,800	0.0002	0.67	240	0.0002	--	--	0.01	0.000286	0.0002 (b)
74-83-9	bromomethane (methyl bromide)	11	9.0	0.009	0.26	15,000	0.052	--	110	0.052	--	--	0.01	0.000555	110
75-00-3	chloroethane	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000665	--
56-23-5	carbon tetrachloride	0.23	150	0.15	1.3	790	0.002	14	320	0.002	--	--	0.01	0.000699	14
75-69-4	trichlorofluoromethane	2,400	160	0.16	4.0	1,100	34	--	24,000	34	--	--	0.01	0.000585	24,000
75-15-0	carbon disulfide	800	46	0.046	1.2	1,200	5.7	--	8,000	5.7	--	--	0.01	0.00068	8,000
67-64-1	acetone	7,200	0.58	0.0006	0.002	1,000,000	29	--	72,000	29	--	--	0.05	0.00129	72,000
75-35-4	dichloroethene;1,1-	0.057	65	0.065	1.1	2,300	0.0004	--	4,000	0.0004	--	--	0.01	0.0000297	4,000
75-09-2	methylene chloride (dichloromethane)	4.6	10	0.010	0.090	13,000	0.020	130	4,800	0.020	0.020	--	0.02	0.00138	0.020
107-13-1	acrylonitrile	0.057	0.85	0.0009	0.004	79,000	0.0002	1.9	3,200	0.0002	--	--	0.05	0.000713	1.9
1634-04-4	methyl tert-butyl ether (MTBE)	20	--	--	--	--	--	560	--	560	--	0.10	0.01	0.00069	0.10
156-60-5	dichloroethene;1,2-,trans	100	38	0.038	0.39	6,300	0.54	--	1,600	0.54	--	--	0.01	0.000661	1,600
75-34-3	dichloroethene;1,1-	7.7	53	0.053	0.23	5,060	0.042	180	16,000	0.042	--	--	0.01	0.000669	180
78-93-3	methyl ethyl ketone (2-butanone)	4,800	--	--	--	--	--	--	48,000	48,000	--	--	0.05	0.000979	48,000
156-59-2	dichloroethene;1,2-,cis	16	36	0.036	0.17	3,500	0.080	--	160	0.080	--	--	0.01	0.000721	160
110-54-3	hexane;n-	480	--	--	--	--	--	--	4,800	4,800	--	--	0.20	0.061800	4,800
594-20-7	dichloropropane;2,2-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000684	--
74-97-5	bromochloromethane	--	--	--	--	--	--	--	--	--	--	--	0.01	0.00119	--
67-66-3	chloroform	1.4	53	0.053	0.15	8,000	0.008	32	800	0.008	--	--	0.01	0.000685	0.008 (b)
71-55-6	trichloroethane;1,1,1-	200	140	0.14	0.71	1,330	1.6	--	160,000	1.6	--	2.0	0.01	0.000616	2.0
563-58-6	dichloropropene;1,1-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000616	--
107-06-2	dichloroethane;1,2-	0.38	38	0.038	0.040	8,500	0.002	11	1,600	0.002	--	--	0.01	0.0000175	11
71-43-2	benzene	1.2	62	0.062	0.23	1,800	0.007	18	320	0.007	--	0.030	0.005	0.0000222	0.030
79-01-6	trichloroethene (TCE)	2.5	94	0.094	0.42	1,100	0.017	12	41	0.017	--	0.030	0.01	0.0000478	0.030
78-87-5	dichloropropane;1,2-	0.50	47	0.047	0.12	2,800	0.003	28	7,200	0.003	--	--	0.01	0.000619	28
74-95-3	dibromomethane	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000783	--
75-27-4	bromodichloromethane (dichlorobromomethane)	0.080	55	0.055	0.066	6,700	0.0004	16	1,600	0.0004	--	--	0.01	0.000693	16
542-75-6	dichloropropene; 1,3-, trans (1,3-dichloropropene)	0.34	27	0.027	0.73	2800	0.002	10	2,400	0.002	--	--	0.01	0.000735	10
108-10-1	methyl isobutyl ketone (4-methyl-2-pentanone)	640	130	0.13	0.006	19000	4.2	--	6,400	4.2	--	--	0.05	0.000682	6,400
108-88-3	toluene	640	140	0.14	0.27	530	4.7	--	6,400	4.7	--	7.0	0.01	0.000708	7.0
10061-01-5	dichloropropene;1,3-, cis	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000714	--
79-00-5	trichloroethane;1,1,2-	0.59	75	0.075	0.037	4,400	0.003	18	320	0.003	--	--	0.01	0.000737	18
591-78-6	hexanone;2-	--	--	--	--	--	--	--	--	--	--	--	0.05	0.000475	--
142-28-9	dichloropropane;1,3-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000717	--
127-18-4	tetrachloroethene (PCE)	0.69	270	0.27	0.75	200	0.007	480	480	0.007	--	0.050	0.01	0.0000458	0.050
124-48-1	dibromochloromethane (chlorodibromomethane)	0.40	470	0.47	0.035	4,400	0.005	12	1,600	0.005	--	--	0.01	0.00106	12
106-93-4	dibromoethane; 1,2- (EDB)	0.010	66	0.066	0.018	4,200	0.0001	0.50	--	0.0001	--	0.005	0.005	0.000023	0.005
108-90-7	chlorobenzene	100	220	0.22	0.15	470	0.87	--	1,600	0.87	--	--	0.01	0.000737	1,600
630-20-6	tetrachloroethane;1,1,1,2-	1.7	93	0.093	0.014	3,000	0.010	38	2,400	0.010	--	--	0.01	0.000573	38
100-41-4	ethylbenzene	70	204	0.20	0.32	170	0.60	--	8,000	0.60	--	6.0	0.01	0.000723	6.0
108-38-3	xylene;m-	1,600	200	0.20	0.30	160	14	--	16,000	14	--	--	0.02	0.0013	16,000
106-42-3	xylene;p-	1,600	310	0.31	0.31	190	17	--	16,000	17	--	--	0.02	0.0013	16,000
100-42-5	styrene	100	910	0.91	0.11	310	2.2	--	16,000	2.2	--	--	0.01	0.000558	16,000
95-47-6	xylene;o-	1,600	240	0.24	0.21	180	15	--	16,000	15	--	--	0.01	0.000623	16,000
1330-20-7	xylene	1,000	230	0.23	0.28	170	9.1	--	16,000	9.1	--	9.0	0.01	0.000623	9.0
75-25-2	bromoform	4.3	130	0.13	0.022	3,100	0.028	130	1,600	0.028	--	--	0.01	0.000793	130
98-82-8	cumene (isopropylbenzene)	800	220	0.22	0.47	61	7.4	--	8,000	7.4	--	--	0.01	0.000605	8,000
79-34-5	tetrachloroethane;1,1,2,2-	0.17	79	0.079	0.014	3,000	0.001	5.0	1,600	0.001	--	--	0.01	0.000763	5.0

**TABLE C-4
SOIL SCREENING LEVELS
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Groundwater Screening Level (Table C-3) (µg/L)	Leaching to GW Model Inputs				Protection of GW (3-Phase Model) mg/kg	SOIL - Direct Contact Pathway (Ingestion Only) Method B: Unrestricted Land Use Standard Formula Values		Method B Preliminary Soil Cleanup Level (mg/kg)	Background Soil Metals Concentrations Statewide (mg/kg) 90 percentile value (a)	Method A Soil Unrestricted Land Use (mg/kg)	ALS Global		
			Koc	Kd	Hcc	S		Carcinogen (mg/kg)	Non-carcinogen (mg/kg)				Reporting Limit (mg/kg)	Quantitation Limit (mg/kg)	Screening Level (mg/kg)
			L/kg @ pH=6.8	L/kg # @ pH 6.8 for metals	unitless	mg/l									
96-18-4	trichloropropane;1,2,3-	0.023	51	0.051	1.1	2,700	0.0002	0.033	320	0.0002	--	--	0.01	0.000803	0.033
108-86-1	bromobenzene	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000767	--
103-65-1	propylbenzene; n-	800	--	--	--	--	--	--	8,000	8,000	--	--	0.01	0.000737	8,000
95-49-8	chlorotoluene, 2-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000766	--
108-67-8	trimethylbenzene; 1,3,5-	80	--	--	--	--	--	--	800	800	--	--	0.01	0.000552	800
106-43-4	chlorotoluene, 4-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.0011	--
98-06-6	butylbenzene; tert-	800	--	--	--	--	--	--	8,000	8,000	--	--	0.01	0.000711	8,000
95-63-6	trimethylbenzene; 1,2,4-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000596	--
135-98-8	butylbenzene; sec-	800	--	--	--	--	--	--	8,000	8,000	--	--	0.01	0.000649	8,000
99-87-6	isopropyltoluene, p-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000531	--
541-73-1	dichlorobenzene;1,3-	320	--	--	--	--	--	--	--	--	--	--	0.01	0.000778	--
106-46-7	dichlorobenzene;1,4-	8.1	620	0.62	0.10	74	0.13	190	5,600	0.13	--	--	0.01	0.000721	190
104-51-8	butylbenzene, n-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.001	--
95-50-1	dichlorobenzene;1,2-	420	380	0.38	0.078	160	4.9	--	7,200	4.9	--	--	0.01	0.000776	7,200
96-12-8	dibromo-3-chloropropane;1,2-	0.0997	28	0.028	0.006	1,200	0.0005	1.3	16	0.0005	--	--	0.05	0.000912	1.3
120-82-1	trichlorobenzene;1,2,4-	1.5	1,700	1.7	0.058	300	0.056	35	800	0.056	--	--	0.01	0.000676	0.056 (b)
87-68-3	hexachlorobutadiene	0.44	54,000	54	0.33	3.2	0.47	13	80	0.47	--	--	0.01	0.000802	13
87-61-6	trichlorobenzene;1,2,3-	--	--	--	--	--	--	--	--	--	--	--	0.01	0.000723	--
SEMIVOLATILE ORGANIC COMPOUNDS															
110-86-1	pyridine	8.0	4.7	0.005	0.28	300	0.037	--	80	0.037	--	--	0.1	0.0549	80
62-75-9	nitrosodimethylamine;N-	1.51	--	--	--	--	--	0.020	0.64	0.020	--	--	0.1	0.0334	0.020
108-95-2	phenol	2,400	29	0.029	0.00002	83,000	11	--	24,000	11	--	--	0.1	0.0495	24,000
62-53-3	aniline	7.7	8.2	0.008	0.00009	36,000	0.032	180	560	0.032	--	--	0.1	0.0576	180
111-44-4	bis(2-chloroethyl)ether	0.94	76	0.076	0.0007	17,000	0.005	0.91	--	0.005	--	--	0.25	0.12	0.91
95-57-8	chlorophenol;2-	40	390	0.39	0.016	22,000	0.47	--	400	0.47	--	--	0.25	0.122	400
100-51-6	benzyl alcohol	800	10	0.010	0.00002	40,000	3.4	--	8,000	3.4	--	--	0.1	0.0636	8,000
95-48-7	cresol;o- (2-methylphenol)	400	91	0.091	0.00005	26,000	2.3	--	4,000	2.3	--	--	0.1	0.0422	4,000
39638-32-9	bis(2-chloroisopropyl) ether	1,400	61	0.061	0.005	1,700	--	--	--	--	--	--	0.25	0.157	--
	cresol; m- & p- (3&4-Methylphenol) (c)	400	48	0.048	0.00004	23,000	2.0	--	4,000	2.0	--	--	0.1	0.0531	2.0 (b)
621-64-7	nitroso-di-n-propylamine;N-	2.0	24	0.024	0.00009	9,900	0.009	0.14	--	0.009	--	--	0.25	0.116	0.14
67-72-1	hexachloroethane	2.0	1,800	1.8	0.16	50	0.080	25	56	0.080	--	--	0.1	0.0254	25
98-95-3	nitrobenzene	16	120	0.12	0.001	2,900	0.10	--	160	0.10	--	--	0.1	0.0242	160
78-59-1	isophorone	8.4	47	0.047	0.0003	12,000	0.041	1,050	16,000	0.041	--	--	0.1	0.0875	1,050
88-75-5	nitrophenol, 2-	--	--	--	--	--	--	--	--	--	--	--	0.1	0.0385	--
105-67-9	dimethylphenol;2,4-	160	--	--	--	--	--	--	1,600	1,600	--	--	0.1	0.0798	1,600
65-85-0	benzoic acid	64,000	0.60	0.0006	0.00006	3,500	257	--	320,000	257	--	--	1	0.888	320,000
111-91-1	bis(2-chloroethoxy)methane	--	--	--	--	--	--	--	--	--	--	--	0.25	0.15	--
120-83-2	dichlorophenol;2,4-	24	150	0.15	0.0001	4,500	0.17	--	240	0.17	--	--	0.5	0.306	240
106-47-8	chloroaniline;p- (4-chloroaniline)	1.89	66	0.066	0.00001	5,300	0.010	5.0	320	0.010	--	--	1	0.705	5.0
87-65-0	dichlorophenol;2,6-	--	--	--	--	--	--	--	--	--	--	--	0.25	0.229	--
59-50-7	methylphenol; 4-chloro-3-	--	--	--	--	--	--	--	--	--	--	--	0.5	0.402	--
77-47-4	hexachlorocyclopentadiene	40	200,000	200	1.1	1.8	160	--	480	160	--	--	0.1	0.0308	480
88-06-2	trichlorophenol;2,4,6-	1.4	380	0.38	0.0003	0	0.016	91	80	0.016	--	--	0.1	0.0494	80
95-95-4	trichlorophenol;2,4,5-	800	1,600	1.6	0.0002	29	29	--	8,000	29	--	--	0.1	0.049	8,000
91-58-7	chloronaphthalene, 2-	--	--	--	--	--	--	--	--	--	--	--	0.1	0.0395	--
88-74-4	nitroaniline, 2-	160	39	0.039	0.00005	1,300	0.77	--	800	0.77	--	--	0.1	0.0235	800
131-11-3	dimethyl phthalate	270,000	31	0.031	0.000004	4,200	--	--	--	--	--	--	0.1	0.0526	--
606-20-2	dinitrotoluene;2,6-	1.82	69	0.069	0.00003	180	0.010	0.67	80	0.010	--	--	0.1	0.0462	0.67
99-09-2	nitroaniline, 3-	--	--	--	--	--	--	--	--	--	--	--	1	0.722	--
51-28-5	dinitrophenol;2,4-	32	0.010	0.00001	0.00002	2,800	0.13	--	160	0.13	--	--	0.1	0.0657	160
100-02-7	nitrophenol, 4-	--	--	--	--	--	--	--	--	--	--	--	0.1	0.0678	--
132-64-9	dibenzofuran	16	--	--	--	--	--	--	80	80	--	--	0.1	0.0402	80
121-14-2	dinitrotoluene;2,4-	0.78	96	0.096	0.000004	270	0.005	3.2	160	0.005	--	--	0.1	0.0268	3.2
58-90-2	tetrachlorophenol;2,3,4,6-	480	--	--	0.0006	100	--	--	2,400	2,400	--	--	0.1	0.062	2,400
84-66-2	diethyl phthalate	13,000	82	0.082	0.00002	1,080	73	--	64,000	73	--	--	0.1	0.0524	64,000
7005-72-3	phenylether; 4-chlorophenyl-	--	--	--	--	--	--	--	--	--	--	--	0.1	0.0516	--
100-01-6	nitroaniline, 4-	--	--	--	--	--	--	--	--	--	--	--	0.25	0.158	--
534-52-1	methylphenol; 4,6-dinitro-2-	--	--	--	--	--	--	--	--	--	--	--	0.1	0.0354	--
86-30-6	nitrosodiphenylamine;N-	3.3	1,300	1.3	0.0002	35	0.10	200	--	0.10	--	--	0.1	0.0424	0.10 (b)
103-33-3	azobenzene	1.63	--	--	--	--	--	9.1	--	9.1	--	--	0.1	0.0548	9.1

**TABLE C-4
SOIL SCREENING LEVELS
CLOSED CITY OF YAKIMA LANDFILL SITE**

CAS Number	Chemical Name	Groundwater Screening Level (Table C-3) (µg/L)	Leaching to GW Model Inputs				Protection of GW (3-Phase Model) mg/kg	SOIL - Direct Contact Pathway (Ingestion Only) Method B: Unrestricted Land Use Standard Formula Values		Method B Preliminary Soil Cleanup Level (mg/kg)	Background Soil Metals Concentrations Statewide (mg/kg) 90 percentile value (a)	Method A Soil Unrestricted Land Use (mg/kg)	ALS Global		
			Koc	Kd	Hcc	S		Carcinogen (mg/kg)	Non-carcinogen (mg/kg)				Reporting Limit (mg/kg)	Quantitation Limit (mg/kg)	Screening Level (mg/kg)
			L/kg @ pH=6.8	L/kg # @ pH 6.8 for metals	unitless	mg/l									
101-55-3	phenylether, 4-bromophenyl-	--	--	--	--	--	--	--	--	--	--	0.1	0.0453	--	
118-74-1	hexachlorobenzene	0.01	80,000	80	0.054	6.2	0.016	0.63	64	0.016	--	--	0.1	0.0448	0.63
86-74-8	carbazole	--	3,400	3.4	0.000006	7.5	--	--	--	--	--	--	0.25	0.134	--
84-74-2	di-butyl phthalate (di-n-butyl phthalate)	1,600	1,600	1.6	0.0000004	11	57	--	8,000	57	--	--	0.1	0.0422	8,000
85-68-7	butyl benzyl phthalate	8.3	14,000	14	0.00005	2.7	2.3	530	16,000	2.3	--	--	0.1	0.028	530
91-94-1	dichlorobenzidine,3,3'-	2.0	720	0.72	0.000002	3.1	0.037	2.2	--	0.037	--	--	0.25	0.213	0.213 (b)
117-81-7	bis(2-ethylhexyl) phthalate	1.2	110,000	110	0.000004	0.34	2.6	71	1,600	2.6	--	--	0.1	0.0274	2.6 (b)
117-84-0	di-n-octyl phthalate	160	83,000,000	83,000	0.003	0.020	265,601	--	800	800	--	--	0.1	0.0271	800
91-20-3	naphthalene	160	1,200	1.2	0.020	31	4.5	--	1,600	4.5	--	5.0	0.02	0.00319	5.0
91-57-6	methyl naphthalene, 2-	32	--	--	--	--	--	--	320	320	--	--	0.02	0.00388	320
90-12-0	methyl naphthalene, 1-	1.5	--	--	--	--	--	35	--	35	--	--	0.02	0.00319	35
208-96-8	acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	0.02	0.00284	--
83-32-9	acenaphthene	650	4,900	4.9	0.006	4.2	66	--	4,800	66	--	--	0.02	0.00264	66 (b)
86-73-7	fluorene	640	7,700	7.7	0.003	2.0	101	--	3,200	101	--	--	0.02	0.00385	101 (b)
87-86-5	pentachlorophenol	0.23	600	0.59	0.000001	2,000	0.004	2.5	400	0.004	--	--	0.1	0.0769	0.0769 (b)
85-01-8	phenanthrene	--	--	--	--	--	--	--	--	--	--	--	0.02	0.00509	--
120-12-7	anthracene	4,800	23,000	23	0.003	0.043	2,275	--	24,000	2,275	--	--	0.02	0.00434	2,275 (b)
206-44-0	fluoranthene	86	49,000	49	0.0007	0.21	85	--	3,200	85	--	--	0.02	0.00413	85 (b)
129-00-0	pyrene	480	68,000	68	0.0005	0.14	655	--	2,400	655	--	--	0.02	0.00446	655 (b)
56-55-3	benzo[a]anthracene	0.009	360,000	360	0.0001	0.009	0.068	1.4	--	0.068	--	--	0.02	0.00329	1.4
218-01-9	chrysene	0.01	400,000	400	0.004	0.002	0.1	140	--	0.1	--	--	0.02	0.00448	140
205-99-2	benzo[b]fluoranthene	0.007	1,200,000	1,200	0.005	0.002	0.18	1.4	--	0.18	--	--	0.02	0.00437	0.18 (b)
207-08-9	benzo[k]fluoranthene	0.024	1,200,000	1,200	0.00003	0.0008	0.57	14	--	0.57	--	--	0.02	0.00362	0.57 (b)
50-32-8	benzo[a]pyrene	0.0104	970,000	970	0.00005	0.002	0.20	0.14	--	0.14	--	0.10	0.02	0.00355	0.10
193-39-5	indeno[1,2,3-cd]pyrene	0.016	3,500,000	3,500	0.00007	0.00002	1.1	1.4	--	1.1	--	--	0.02	0.00422	1.4
53-70-3	dibenzo[a,h]anthracene	0.0127	1,800,000	1,800	0.000006	0.002	0.46	0.14	--	0.14	--	--	0.02	0.00499	0.14
191-24-2	benzo[g,h,i]perylene	--	--	--	--	--	--	--	--	--	--	--	0.02	0.00563	--
	cPAH TEQ	0.10	--	--	--	--	--	--	--	--	0.10	--	--	--	0.10

BHC = benzene hexachloride
 BTEX = benzene, toluene, ethylbenzene, xylenes
 CAS = Chemical Abstracts Service
 DDD = dichlorodiphenyldichloroethane
 DDE = dichlorodiphenyldichloroethylene
 DDT = dichlorodiphenyltrichloroethane
 mg/kg = milligram per kilogram
 PAH = polycyclic aromatic hydrocarbon
 PCB = polychlorinated biphenyl
 SEMI = semivolatile
 TPH = total petroleum hydrocarbon
 VOL = volatile

-- = Not Available

(a) PTI. 1989. Background Concentrations of Selected Chemicals in Water, Soil, Sediments, and Air of Washington State, Draft Report. April.

(b) Screening level reflects consideration of protection of groundwater criteria based on RI groundwater sample analytical results.

(c) Screening level for m- & p-cresol based on criteria for m-cresol (3-methylphenol), as it is more conservative than the criteria for p-cresol (4-methylphenol).

TABLE C-5

**SOIL LABORATORY ANALYTICAL METHODS,
METHOD DETECTION LIMITS, PRACTICAL QUANTITATION LIMITS, AND REPORTING LIMITS
CLOSED CITY OF YAKIMA LANDFILL**

Chemical Class	Method	Analyte	MDL	PQL	RL	Units	CAS
TPH-HCID	NWTPH-HCID	HCID-Gas Range	20.0	20.0	20	mg/kg	86290-81-5
	NWTPH-HCID	HCID-Diesel Range	50.0	50.0	50	mg/kg	68334-30-5
	NWTPH-HCID	HCID-Oil Range	100	100	100	mg/kg	PHCMO
TPH-G	NWTPH-Gx	TPH-Gasoline Range	0.488	1.46	3	mg/kg	86290-81-5
TPH-Dx	NWTPH-Dx (w/ & w/o SGC)	TPH-Diesel Range	3.93	11.8	25	mg/kg	TPHDIESELONLY
	NWTPH-Dx (w/ & w/o SGC)	TPH-Oil Range	7.63	22.9	50	mg/kg	TPHOILONLY
	NWTPH-Dx (w/ & w/o SGC)	TPH-Mineral Oil	7.63	22.9	50	mg/kg	TPHMINOIL
Metals, Total	EPA-6020	Arsenic	0.245	0.73	1	mg/kg	7440-38-2
	EPA-6020	Barium	0.045	0.14	0.5	mg/kg	7440-39-3
	EPA-6020	Cadmium	0.075	0.225	0.5	mg/kg	7440-43-9
	EPA-6020	Calcium	7.48	22.4	50.0	mg/kg	7440-70-2
	EPA-6020	Chromium	0.125	0.37	0.5	mg/kg	7440-47-3
	EPA-7196	Chromium (VI)	0.90	2.70	5	mg/kg	7440-47-3
	EPA-6020	Iron	11.2	33.6	50	mg/kg	7439-89-6
	EPA-6020	Lead	0.080	0.235	0.50	mg/kg	7439-92-1
	EPA-6020	Manganese	0.095	0.290	0.5	mg/kg	7439-96-5
	EPA-6020	Selenium	1.07	3.21	5	mg/kg	7782-49-2
	EPA-6020	Silver	0.075	0.230	0.5	mg/kg	7440-22-4
	EPA-6020	Sodium	8.68	26	50	mg/kg	7440-23-5
	EPA-7471	Mercury	0.001	0.00407	0.02	mg/kg	7439-97-6
Conventionals	EPA-300.0M	Chloride	0.307	0.92	1	mg/kg	
	EPA-300.0M	Fluoride	NA	NA	1	mg/kg	16984-48-8
	EPA-300.0M	Nitrate	NA	NA	3	mg/kg	14797-55-8
	EPA-300.0M	Nitrite	NA	NA	1	mg/kg	14797-65-0
	EPA-300.0M	Sulfate	2.0	2.0	2.0	mg/kg	
	EPA-350.1M	Ammonia	0.5	0.5	0.5	mg/kg	7664-41-7
	EPA-9060	Total Organic Carbon	5	5	5	mg/kg	
EPA-9045	pH	NA	1	1	pH UNITS	PH	
Pesticides	EPA-8081	A-BHC	0.00035	0.005	0.005	mg/kg	319-84-6
	EPA-8081	G-BHC (Lindane)	0.00045	0.005	0.005	mg/kg	58-89-9
	EPA-8081	B-BHC	0.0005	0.005	0.005	mg/kg	319-85-7
	EPA-8081	Heptachlor	0.00083	0.005	0.005	mg/kg	76-44-8
	EPA-8081	D-BHC	0.00037	0.005	0.005	mg/kg	319-86-8
	EPA-8081	Aldrin	0.00034	0.005	0.005	mg/kg	309-00-2
	EPA-8081	Heptachlor Epoxide	0.00039	0.005	0.005	mg/kg	1024-57-3
	EPA-8081	Chlordane	0.022	0.1	0.1	mg/kg	57-74-9
	EPA-8081	Endosulfan I	0.0017	0.005	0.005	mg/kg	959-98-8
	EPA-8081	4,4'-DDE	0.0016	0.005	0.005	mg/kg	72-55-9
	EPA-8081	Dieldrin	0.00048	0.005	0.005	mg/kg	60-57-1
	EPA-8081	Endrin	0.00045	0.005	0.005	mg/kg	72-20-8
	EPA-8081	4,4'-DDD	0.001	0.005	0.005	mg/kg	72-54-8
	EPA-8081	Endosulfan II	0.00086	0.005	0.005	mg/kg	33213-65-9
	EPA-8081	4,4'-DDT	0.00085	0.005	0.005	mg/kg	50-29-3
	EPA-8081	Endrin Aldehyde	0.0014	0.005	0.005	mg/kg	7421-93-4
	EPA-8081	Endosulfan Sulfate	0.00057	0.005	0.005	mg/kg	1031-07-8
EPA-8081	Methoxychlor	0.00061	0.005	0.005	mg/kg	72-43-5	
EPA-8081	Toxaphene	0.037	0.25	0.25	mg/kg	8001-35-2	
PCBs	EPA-8082	PCB-1016	0.0021	0.01	0.01	mg/kg	12674-11-2
	EPA-8082	PCB-1221	0.0021	0.02	0.02	mg/kg	11104-28-2
	EPA-8082	PCB-1232	0.0021	0.01	0.01	mg/kg	11141-16-5
	EPA-8082	PCB-1242	0.0021	0.01	0.01	mg/kg	53469-21-9
	EPA-8082	PCB-1248	0.0021	0.01	0.01	mg/kg	12672-29-6
	EPA-8082	PCB-1254	0.0021	0.01	0.01	mg/kg	11097-69-1
EPA-8082	PCB-1260	0.0021	0.01	0.01	mg/kg	11096-82-5	

TABLE C-5
SOIL LABORATORY ANALYTICAL METHODS,
METHOD DETECTION LIMITS, PRACTICAL QUANTITATION LIMITS, AND REPORTING LIMITS
CLOSED CITY OF YAKIMA LANDFILL

Chemical Class	Method	Analyte	MDL	PQL	RL	Units	CAS
VOCs	EPA-8260	Dichlorodifluoromethane	0.368	1.1	10	µg/kg	75-71-8
	EPA-8260	Chloromethane	0.231	0.665	10	µg/kg	74-87-3
	EPA-8260	Vinyl Chloride	0.0095	0.029	10	µg/kg	75-01-4
	EPA-8260	Bromomethane	0.185	0.555	10	µg/kg	74-83-9
	EPA-8260	Chloroethane	0.222	0.665	10	µg/kg	75-00-3
	EPA-8260	Carbon Tetrachloride	0.233	0.699	10	µg/kg	56-23-5
	EPA-8260	Trichlorofluoromethane	0.195	0.585	10	µg/kg	75-69-4
	EPA-8260	Carbon Disulfide	0.227	0.68	10	µg/kg	75-15-0
	EPA-8260	Acetone	0.430	1.29	50	µg/kg	67-64-1
	EPA-8260	1,1-Dichloroethene	0.0099	0.0297	10	µg/kg	75-35-4
	EPA-8260	Methylene chloride	0.460	1.38	20	µg/kg	75-09-2
	EPA-8260	Acrylonitrile	0.238	0.713	50	µg/kg	107-13-1
	EPA-8260	Methyl T-Butyl Ether	0.230	0.69	10	µg/kg	1634-04-4
	EPA-8260	Trans-1,2-Dichloroethene	0.220	0.661	10	µg/kg	156-60-5
	EPA-8260	1,1-Dichloroethane	0.223	0.669	10	µg/kg	75-34-3
	EPA-8260	2-Butanone	0.326	0.979	50	µg/kg	78-93-3
	EPA-8260	Cis-1,2-Dichloroethene	0.240	0.721	10	µg/kg	156-59-2
	EPA-8260	Hexane	0.0206	0.0618	0.2	µg/kg	110-54-3
	EPA-8260	2,2-Dichloropropane	0.228	0.684	10	µg/kg	594-20-7
	EPA-8260	Bromochloromethane	0.395	1.19	10	µg/kg	74-97-5
	EPA-8260	Chloroform	0.228	0.685	10	µg/kg	67-66-3
	EPA-8260	1,1,1-Trichloroethane	0.205	0.616	10	µg/kg	71-55-6
	EPA-8260	1,1-Dichloropropene	0.205	0.616	10	µg/kg	563-58-6
	EPA-8260	1,2-Dichloroethane	0.0058	0.0175	10	µg/kg	107-06-2
	EPA-8260	Benzene	0.0074	0.0222	5	µg/kg	71-43-2
	EPA-8260	Trichloroethene	0.0159	0.0478	10	µg/kg	79-01-6
	EPA-8260	1,2-Dichloropropane	0.206	0.619	10	µg/kg	78-87-5
	EPA-8260	Dibromomethane	0.261	0.783	10	µg/kg	74-95-3
	EPA-8260	Bromodichloromethane	0.231	0.693	10	µg/kg	75-27-4
	EPA-8260	Trans-1,3-Dichloropropene	0.245	0.735	10	µg/kg	10061-02-6
	EPA-8260	4-Methyl-2-Pentanone	0.227	0.682	50	µg/kg	108-10-1
	EPA-8260	Toluene	0.236	0.708	10	µg/kg	108-88-3
	EPA-8260	Cis-1,3-Dichloropropene	0.238	0.714	10	µg/kg	10061-01-5
	EPA-8260	1,1,2-Trichloroethane	0.246	0.737	10	µg/kg	79-00-5
	EPA-8260	2-Hexanone	0.158	0.475	50	µg/kg	591-78-6
	EPA-8260	1,3-Dichloropropane	0.239	0.717	10	µg/kg	142-28-9
	EPA-8260	Tetrachloroethylene	0.0153	0.0458	10	µg/kg	127-18-4
	EPA-8260	Dibromochloromethane	0.355	1.06	10	µg/kg	124-48-1
	EPA-8260	1,2-Dibromoethane	0.0077	0.023	5	µg/kg	106-93-4
	EPA-8260	Chlorobenzene	0.246	0.737	10	µg/kg	108-90-7
	EPA-8260	1,1,1,2-Tetrachloroethane	0.191	0.573	10	µg/kg	630-20-6
	EPA-8260	Ethylbenzene	0.241	0.723	10	µg/kg	100-41-4
	EPA-8260	m,p-Xylene	0.434	1.3	20	µg/kg	179601-23-1
	EPA-8260	Styrene	0.186	0.558	10	µg/kg	100-42-5
	EPA-8260	o-Xylene	0.208	0.623	10	µg/kg	95-47-6
	EPA-8260	Bromoform	0.264	0.793	10	µg/kg	75-25-2
	EPA-8260	Isopropylbenzene	0.202	0.605	10	µg/kg	98-82-8
	EPA-8260	1,1,2,2-Tetrachloroethane	0.254	0.763	10	µg/kg	79-34-5
	EPA-8260	1,2,3-Trichloropropane	0.268	0.803	10	µg/kg	96-18-4
	EPA-8260	Bromobenzene	0.256	0.767	10	µg/kg	108-86-1
	EPA-8260	N-Propyl Benzene	0.246	0.737	10	µg/kg	103-65-1
	EPA-8260	2-Chlorotoluene	0.255	0.766	10	µg/kg	95-49-8
	EPA-8260	1,3,5-Trimethylbenzene	0.184	0.552	10	µg/kg	108-67-8
	EPA-8260	4-Chlorotoluene	0.367	1.1	10	µg/kg	106-43-4
	EPA-8260	T-Butyl Benzene	0.237	0.711	10	µg/kg	98-06-6
	EPA-8260	1,2,4-Trimethylbenzene	0.199	0.596	10	µg/kg	95-63-6
	EPA-8260	S-Butyl Benzene	0.216	0.649	10	µg/kg	135-98-8
	EPA-8260	P-Isopropyltoluene	0.177	0.531	10	µg/kg	99-87-6
	EPA-8260	1,3 Dichlorobenzene	0.259	0.778	10	µg/kg	541-73-1
	EPA-8260	1,4-Dichlorobenzene	0.240	0.721	10	µg/kg	106-46-7
	EPA-8260	N-Butylbenzene	0.192	0.575	10	µg/kg	104-51-8
	EPA-8260	1,2-Dichlorobenzene	0.259	0.776	10	µg/kg	95-50-1
	EPA-8260	1,2-Dibromo 3-Chloropropane	0.304	0.912	50	µg/kg	96-12-8

TABLE C-5
SOIL LABORATORY ANALYTICAL METHODS,
METHOD DETECTION LIMITS, PRACTICAL QUANTITATION LIMITS, AND REPORTING LIMITS
CLOSED CITY OF YAKIMA LANDFILL

Chemical Class	Method	Analyte	MDL	PQL	RL	Units	CAS
VOCs (cont.)	EPA-8260	1,2,4-Trichlorobenzene	0.225	0.676	10	µg/kg	120-82-1
	EPA-8260	Hexachlorobutadiene	0.267	0.802	10	µg/kg	87-68-3
	EPA-8260	1,2,3-Trichlorobenzene	0.241	0.723	10	µg/kg	87-61-6
SVOCs	EPA-8270	Pyridine	18.3	54.9	100	µg/kg	110-86-1
	EPA-8270	N-Nitrosodimethylamine	11.1	33.4	100	µg/kg	62-75-9
	EPA-8270	Phenol	16.5	49.5	100	µg/kg	108-95-2
	EPA-8270	Aniline	19.2	57.6	100	µg/kg	62-53-3
	EPA-8270	Bis(2-Chloroethyl)Ether	40.0	120	250	µg/kg	111-44-4
	EPA-8270	2-Chlorophenol	40.5	122	250	µg/kg	95-57-8
	EPA-8270	Benzyl Alcohol	21.2	63.6	100	µg/kg	100-51-6
	EPA-8270	2-Methylphenol	14.1	42.2	100	µg/kg	95-48-7
	EPA-8270	Bis(2-Chloroisopropyl)Ether	52.2	157	250	µg/kg	39638-32-9
	EPA-8270	3&4-Methylphenol	17.7	53.1	100	µg/kg	15831-10-4
	EPA-8270	N-Nitroso-Di-N-Propylamine	38.8	116	250	µg/kg	621-64-7
	EPA-8270	Hexachloroethane	8.48	25.4	100	µg/kg	67-72-1
	EPA-8270	Nitrobenzene	8.08	24.2	100	µg/kg	98-95-3
	EPA-8270	Isophorone	29.2	87.5	100	µg/kg	78-59-1
	EPA-8270	2-Nitrophenol	12.8	38.5	100	µg/kg	88-75-5
	EPA-8270	2,4-Dimethylphenol	26.6	79.8	100	µg/kg	105-67-9
	EPA-8270	Benzoic Acid	296	888	1000	µg/kg	65-85-0
	EPA-8270	Bis(2-Chloroethoxy)Methane	50.1	150	250	µg/kg	111-91-1
	EPA-8270	2,4-Dichlorophenol	102	306	500	µg/kg	120-83-2
	EPA-8270	4-Chloroaniline	235	705	1000	µg/kg	106-47-8
	EPA-8270	2,6-Dichlorophenol	76.2	229	250	µg/kg	87-65-0
	EPA-8270	4-Chloro-3-Methylphenol	134	402	500	µg/kg	59-50-7
	EPA-8270	Hexachlorocyclopentadiene	10.3	30.8	100	µg/kg	77-47-4
	EPA-8270	2,4,6-Trichlorophenol	16.5	49.4	100	µg/kg	88-06-2
	EPA-8270	2,4,5-Trichlorophenol	16.3	49.0	100	µg/kg	95-95-4
	EPA-8270	2-Chloronaphthalene	13.2	39.5	100	µg/kg	91-58-7
	EPA-8270	2-Nitroaniline	7.84	23.5	100	µg/kg	88-74-4
	EPA-8270	Dimethylphthalate	17.5	52.6	100	µg/kg	131-11-3
	EPA-8270	2,6-Dinitrotoluene	15.4	46.2	100	µg/kg	606-20-2
	EPA-8270	3-Nitroaniline	241	722	1000	µg/kg	99-09-2
	EPA-8270	2,4-Dinitrophenol	21.9	65.7	100	µg/kg	51-28-5
	EPA-8270	4-Nitrophenol	22.6	67.8	100	µg/kg	100-02-7
	EPA-8270	Dibenzofuran	13.4	40.2	100	µg/kg	132-64-9
	EPA-8270	2,4-Dinitrotoluene	8.95	26.9	100	µg/kg	121-14-2
	EPA-8270	2,3,4,6-Tetrachlorophenol	20.7	62.0	100	µg/kg	58-90-2
	EPA-8270	Diethylphthalate	17.45	52.4	100	µg/kg	84-66-2
	EPA-8270	4-Chlorophenyl-Phenylether	17.2	51.6	100	µg/kg	7005-72-3
	EPA-8270	4-Nitroaniline	52.7	158	250	µg/kg	100-01-6
	EPA-8270	4,6-Dinitro-2-Methylphenol	11.8	35.4	100	µg/kg	534-52-1
	EPA-8270	N-Nitrosodiphenylamine	14.1	42.4	100	µg/kg	86-30-6
	EPA-8270	Azobenzene	18.3	54.8	100	µg/kg	103-33-3
	EPA-8270	4-Bromophenyl-Phenylether	15.1	45.3	100	µg/kg	101-55-3
	EPA-8270	Hexachlorobenzene	14.9	44.8	100	µg/kg	118-74-1
	EPA-8270	Carbazole	44.6	134	250	µg/kg	86-74-8
	EPA-8270	Di-N-Butylphthalate	14.1	42.2	100	µg/kg	84-74-2
	EPA-8270	Butylbenzylphthalate	9.33	28.0	100	µg/kg	85-68-7
	EPA-8270	3,3-Dichlorobenzidine	71.1	213	250	µg/kg	91-94-1
EPA-8270	Bis(2-Ethylhexyl)Phthalate	9.15	27.5	100	µg/kg	117-81-7	
EPA-8270	Di-N-Octylphthalate	9.03	27.1	100	µg/kg	117-84-0	

TABLE C-5
SOIL LABORATORY ANALYTICAL METHODS,
METHOD DETECTION LIMITS, PRACTICAL QUANTITATION LIMITS, AND REPORTING LIMITS
CLOSED CITY OF YAKIMA LANDFILL

Chemical Class	Method	Analyte	MDL	PQL	RL	Units	CAS
PAHs	EPA-8270 SIM	Naphthalene	1.06	3.19	20	µg/kg	91-20-3
	EPA-8270 SIM	2-Methylnaphthalene	1.29	3.88	20	µg/kg	91-57-6
	EPA-8270 SIM	1-Methylnaphthalene	1.06	3.19	20	µg/kg	90-12-0
	EPA-8270 SIM	Acenaphthylene	0.948	2.84	20	µg/kg	208-96-8
	EPA-8270 SIM	Acenaphthene	0.881	2.64	20	µg/kg	83-32-9
	EPA-8270 SIM	Fluorene	1.28	3.85	20	µg/kg	86-73-7
	EPA-8270 SIM	Pentachlorophenol	25.6	76.9	100	µg/kg	87-86-5
	EPA-8270 SIM	Phenanthrene	1.70	5.09	20	µg/kg	85-01-8
	EPA-8270 SIM	Anthracene	1.45	4.34	20	µg/kg	120-12-7
	EPA-8270 SIM	Fluoranthene	1.38	4.13	20	µg/kg	206-44-0
	EPA-8270 SIM	Pyrene	1.49	4.46	20	µg/kg	129-00-0
	EPA-8270 SIM	Benzo[A]Anthracene	1.10	3.29	20	µg/kg	56-55-3
	EPA-8270 SIM	Chrysene	1.49	4.48	20	µg/kg	218-01-9
	EPA-8270 SIM	Benzo[B]Fluoranthene	1.46	4.37	20	µg/kg	205-99-2
	EPA-8270 SIM	Benzo[K]Fluoranthene	1.21	3.62	20	µg/kg	207-08-9
	EPA-8270 SIM	Benzo[A]Pyrene	1.18	3.55	20	µg/kg	50-32-8
	EPA-8270 SIM	Indeno[1,2,3-Cd]Pyrene	1.41	4.22	20	µg/kg	193-39-5
	EPA-8270 SIM	Dibenz[A,H]Anthracene	1.66	4.99	20	µg/kg	53-70-3
	EPA-8270 SIM	Benzo[G,H,I]Perylene	1.88	5.63	20	µg/kg	191-24-2

EPA = U.S. Environmental Protection Agency

HCID = hydrocarbon identification

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyls

SGC = silica gel cleanup

SVOCs = semivolatile organic compounds

TPH = total petroleum hydrocarbons

TPH-Dx = diesel-range extended petroleum hydrocarbons

TPH-G = gasoline-range petroleum hydrocarbons

VOCs = volatile organic compounds

TABLE C-6

**GROUNDWATER LABORATORY ANALYTICAL METHODS,
METHOD DETECTION LIMITS, PRACTICAL QUANTITATION LIMITS, AND REPORTING LIMITS
CLOSED CITY OF YAKIMA LANDFILL SITE**

Chemical Class	Method	Analyte	MDL	PQL	RL	Units	CAS
TPH-HCID	NWTPH-HCID	HCID-Gas Range	130	130	130	µg/L	86290-81-5
	NWTPH-HCID	HCID-Diesel Range	310	310	310	µg/L	68334-30-5
	NWTPH-HCID	HCID-Oil Range	310	310	310	µg/L	PHCMO
TPH-G	NWTPH-Gx	TPH-Gasoline Range	9.76	29.3	50.0	µg/L	86290-81-5
TPH-Dx	NWTPH-Dx (w/ & w/o SGC)	TPH-Diesel Range	39.5	119	130	µg/L	TPHDIESELONLY
	NWTPH-Dx (w/ & w/o SGC)	TPH-Oil Range	36.2	109	250	µg/L	TPHOILONLY
	NWTPH-Dx (w/ & w/o SGC)	TPH-Mineral Oil	36.2	109	250	µg/L	TPHMINOIL
Metals, Dissolved	EPA-200.8	Arsenic	0.150	0.45	1.00	µg/L	7440-38-2
	EPA-200.8	Barium	0.220	0.67	1.00	µg/L	7440-39-3
	EPA-200.8	Cadmium	0.120	0.36	1.00	µg/L	7440-43-9
	EPA-200.8	Calcium	3.6	10.6	50.0	µg/L	7440-70-2
	EPA-200.8	Chromium	0.100	0.29	2.00	µg/L	7440-47-3
	EPA-7196	Chromium (VI)	1.80	5.40	10.0	µg/L	7440-47-3
	EPA-200.8	Iron	5.76	17.3	50.0	µg/L	7439-89-6
	EPA-200.8	Lead	0.0900	0.28	1.00	µg/L	7439-92-1
	EPA-200.8	Magnesium	9.15	27.4	50.0	µg/L	7439-95-4
	EPA-200.8	Manganese	0.110	0.34	2.00	µg/L	7439-96-5
	EPA-200.8	Potassium	2.31	6.93	50	µg/L	7440-09-7
	EPA-200.8	Selenium	1.14	3.41	4.00	µg/L	7782-49-2
	EPA-200.8	Silver	0.0700	0.20	1.00	µg/L	7440-22-4
	EPA-200.8	Sodium	10.7	32.0	50.0	µg/L	7440-23-5
	EPA-7470	Mercury	0.0363	0.11	0.20	µg/L	7439-97-6
Metals, Total	EPA-200.8	Arsenic	0.150	0.45	1.00	µg/L	7440-38-2
	EPA-200.8	Barium	0.220	0.67	1.00	µg/L	7440-39-3
	EPA-200.8	Cadmium	0.120	0.36	1.00	µg/L	7440-43-9
	EPA-200.8	Calcium	3.6	10.6	50.0	µg/L	7440-70-2
	EPA-200.8	Chromium	0.100	0.29	2.00	µg/L	7440-47-3
	EPA-7196	Chromium (VI)	1.80	5.40	10.0	µg/L	7440-47-3
	EPA-200.8	Iron	5.76	17.3	50.0	µg/L	7439-89-6
	EPA-200.8	Lead	0.0900	0.28	1.00	µg/L	7439-92-1
	EPA-200.8	Magnesium	9.15	27.4	50.0	µg/L	7439-95-4
	EPA-200.8	Manganese	0.110	0.34	2.00	µg/L	7439-96-5
	EPA-200.8	Potassium	2.31	6.93	50	µg/L	7440-09-7
	EPA-200.8	Selenium	1.14	3.41	4.00	µg/L	7782-49-2
	EPA-200.8	Silver	0.0700	0.20	1.00	µg/L	7440-22-4
	EPA-200.8	Sodium	10.7	32.0	50.0	µg/L	7440-23-5
	EPA-7470	Mercury	0.0363	0.11	0.20	µg/L	7439-97-6
Conventionals	SM2540C	Total Dissolved Solids (TDS)	5.0	5.0	5.0	mg/L	
	EPA-300.0	Chloride	0.031	0.092	0.092	mg/L	16887-00-6
	EPA-300.0	Fluoride	0.0540	0.16	0.16	mg/L	16984-48-8
	EPA-300.0	Nitrate	0.0509	0.15	0.153	mg/L	14797-55-8
	EPA-300.0	Nitrite	0.0475	0.1426	0.143	mg/L	14797-65-0
	EPA-300.0	Sulfate (SO4)	0.0868	0.26	0.26	mg/L	
	EPA-350.1	Ammonia (NH3-N)	0.0090	0.010	0.010	mg/L	7664-41-7
	SM2320B	Alkalinity (as Ca CO3)	5	15	15	mgCaCO3/L	
	SM2320B	Bicarbonate (HCO3)	5	15	15	mgCaCO3/L	
	SM5310C	Total Organic Carbon (TOC)	5.0	5.0	5	mg/L	

TABLE C-6

**GROUNDWATER LABORATORY ANALYTICAL METHODS,
METHOD DETECTION LIMITS, PRACTICAL QUANTITATION LIMITS, AND REPORTING LIMITS
CLOSED CITY OF YAKIMA LANDFILL SITE**

Chemical Class	Method	Analyte	MDL	PQL	RL	Units	CAS
Pesticides	EPA-8081	A-BHC	0.00033	0.01	0.01	µg/L	319-84-6
	EPA-8081	G-BHC (Lindane)	0.00044	0.01	0.01	µg/L	58-89-9
	EPA-8081	B-BHC	0.00083	0.01	0.01	µg/L	319-85-7
	EPA-8081	Heptachlor	0.00036	0.01	0.01	µg/L	76-44-8
	EPA-8081	D-BHC	0.00057	0.01	0.01	µg/L	319-86-8
	EPA-8081	Aldrin	0.0004	0.01	0.01	µg/L	309-00-2
	EPA-8081	Heptachlor Epoxide	0.00032	0.01	0.01	µg/L	1024-57-3
	EPA-8081	Chlordane	0.022	0.20	0.20	µg/L	57-74-9
	EPA-8081	Endosulfan I	0.00044	0.01	0.01	µg/L	959-98-8
	EPA-8081	4,4'-DDE	0.00036	0.01	0.01	µg/L	72-55-9
	EPA-8081	Dieldrin	0.00035	0.01	0.01	µg/L	60-57-1
	EPA-8081	Endrin	0.00068	0.01	0.01	µg/L	72-20-8
	EPA-8081	4,4'-DDD	0.0015	0.01	0.01	µg/L	72-54-8
	EPA-8081	Endosulfan II	0.0004	0.01	0.01	µg/L	33213-65-9
	EPA-8081	4,4'-DDT	0.00058	0.01	0.01	µg/L	50-29-3
	EPA-8081	Endrin Aldehyde	0.00046	0.01	0.01	µg/L	7421-93-4
	EPA-8081	Endosulfan Sulfate	0.00047	0.01	0.01	µg/L	1031-07-8
	EPA-8081	Methoxychlor	0.00093	0.01	0.01	µg/L	72-43-5
	EPA-8081	Toxaphene	0.051	0.5	0.5	µg/L	8001-35-2
	PCBs	EPA-8082	PCB-1016	0.0021	0.005	0.005	µg/L
EPA-8082		PCB-1221	0.0021	0.01	0.01	µg/L	11104-28-2
EPA-8082		PCB-1232	0.0021	0.005	0.005	µg/L	11141-16-5
EPA-8082		PCB-1242	0.0021	0.005	0.005	µg/L	53469-21-9
EPA-8082		PCB-1248	0.0021	0.005	0.005	µg/L	12672-29-6
EPA-8082		PCB-1254	0.0021	0.005	0.005	µg/L	11097-69-1
EPA-8082		PCB-1260	0.0021	0.005	0.005	µg/L	11096-82-5
VOCs	EPA-8260C	Dichlorodifluoromethane	0.0314	0.094	2.00	µg/L	75-71-8
	EPA-8260C	Chloromethane	0.0769	0.23	2.00	µg/L	74-87-3
	EPA-8260C	Bromomethane	0.0481	0.14	2.00	µg/L	74-83-9
	EPA-8260C	Chloroethane	0.0387	0.116	2.00	µg/L	75-00-3
	EPA-8260C	Trichlorofluoromethane	0.0149	0.045	2.00	µg/L	75-69-4
	EPA-8260C	Carbon Disulfide	0.0181	0.0542	0.10	µg/L	75-15-0
	EPA-8260C	Acetone	0.225	0.68	25.0	µg/L	67-64-1
	EPA-8260C	1,1-Dichloroethene	0.00458	0.014	2.00	µg/L	75-35-4
	EPA-8260C	Methylene Chloride	0.226	0.68	5.00	µg/L	75-09-2
	EPA-8260C	Acrylonitrile	0.0191	0.0572	10.0	µg/L	107-13-1
	EPA-8260C	Methyl T-Butyl Ether	0.0114	0.0343	2.00	µg/L	1634-04-4
	EPA-8260C	Trans-1,2-Dichloroethene	0.0323	0.097	2.00	µg/L	156-60-5
	EPA-8260C	1,1-Dichloroethane	0.00994	0.030	2.00	µg/L	75-34-3
	EPA-8260C	2-Butanone	0.472	1.41	10.0	µg/L	78-93-3
	EPA-8260C	Cis-1,2-Dichloroethene	0.0227	0.068	2.00	µg/L	156-59-2
	EPA-8260C	Hexane	0.206	0.618	2.00	µg/L	110-54-3
	EPA-8260C	2,2-Dichloropropane	0.0138	0.041	2.00	µg/L	594-20-7
	EPA-8260C	Bromochloromethane	0.0382	0.115	2.00	µg/L	74-97-5
	EPA-8260C	1,1,1-Trichloroethane	0.0197	0.059	2.00	µg/L	71-55-6
	EPA-8260C	1,1-Dichloropropene	0.0224	0.067	2.00	µg/L	563-58-6
	EPA-8260C	1,2-Dichloroethane	0.00471	0.014	2.00	µg/L	107-06-2
	EPA-8260C	Benzene	0.00935	0.028	2.00	µg/L	71-43-2
	EPA-8260C	Dibromomethane	0.0236	0.071	2.00	µg/L	74-95-3
	EPA-8260C	Bromodichloromethane	0.0197	0.059	2.00	µg/L	75-27-4
	EPA-8260C	4-Methyl-2-Pentanone	0.114	0.34	10.0	µg/L	108-10-1
	EPA-8260C	Toluene	0.00509	0.015	2.00	µg/L	108-88-3
	EPA-8260C	Cis-1,3-Dichloropropene	0.0159	0.048	2.00	µg/L	10061-01-5
	EPA-8260C	2-Hexanone	0.312	0.94	10.0	µg/L	591-78-6
	EPA-8260C	1,3-Dichloropropane	0.0221	0.066	2.00	µg/L	142-28-9
	EPA-8260C	Tetrachloroethylene	0.00777	0.023	2.00	µg/L	127-18-4
EPA-8260C	1,2-Dibromoethane	0.00789	0.01	0.01	µg/L	106-93-4	
EPA-8260C	Chlorobenzene	0.00798	0.024	2.00	µg/L	108-90-7	
EPA-8260C	Ethylbenzene	0.00973	0.029	2.00	µg/L	100-41-4	
EPA-8260C	m,p-Xylene	0.0352	0.11	4.00	µg/L	179601-23-1	
EPA-8260C	Styrene	0.00665	0.020	2.00	µg/L	100-42-5	

TABLE C-6

**GROUNDWATER LABORATORY ANALYTICAL METHODS,
METHOD DETECTION LIMITS, PRACTICAL QUANTITATION LIMITS, AND REPORTING LIMITS
CLOSED CITY OF YAKIMA LANDFILL SITE**

Chemical Class	Method	Analyte	MDL	PQL	RL	Units	CAS
VOCs (cont.)	EPA-8260C	o-Xylene	0.0231	0.069	2.00	µg/L	95-47-6
	EPA-8260C	Bromoform	0.0176	0.053	2.00	µg/L	75-25-2
	EPA-8260C	Isopropylbenzene	0.0127	0.0381	2.00	µg/L	98-82-8
	EPA-8260C	1,2,3-Trichloropropane	0.00759	0.023	2.00	µg/L	96-18-4
	EPA-8260C	Bromobenzene	0.0136	0.041	2.00	µg/L	108-86-1
	EPA-8260C	N-Propyl Benzene	0.0120	0.036	2.00	µg/L	103-65-1
	EPA-8260C	2-Chlorotoluene	0.0106	0.032	2.00	µg/L	95-49-8
	EPA-8260C	1,3,5-Trimethylbenzene	0.0137	0.041	2.00	µg/L	108-67-8
	EPA-8260C	4-Chlorotoluene	0.0133	0.040	2.00	µg/L	106-43-4
	EPA-8260C	T-Butyl Benzene	0.0169	0.051	2.00	µg/L	98-06-6
	EPA-8260C	1,2,4-Trimethylbenzene	0.0179	0.054	2.00	µg/L	95-63-6
	EPA-8260C	S-Butyl Benzene	0.00626	0.019	2.00	µg/L	135-98-8
	EPA-8260C	P-Isopropyltoluene	0.0115	0.035	2.00	µg/L	99-87-6
	EPA-8260C	1,3 Dichlorobenzene	0.0138	0.0413	2.00	µg/L	541-73-1
	EPA-8260C	1,4-Dichlorobenzene	0.0150	0.045	2.00	µg/L	106-46-7
	EPA-8260C	N-Butylbenzene	0.0175	0.053	2.00	µg/L	104-51-8
	EPA-8260C	1,2-Dichlorobenzene	0.00945	0.028	2.00	µg/L	95-50-1
	EPA-8260C	1,2-Dibromo 3-Chloropropane	0.0332	0.0997	10.0	µg/L	96-12-8
	EPA-8260C	Hexachlorobutadiene	0.0231	0.01	0.01	µg/L	87-68-3
	EPA-8260C	1,2,3-Trichlorobenzene	0.0151	0.045	2.00	µg/L	87-61-6
VOCs-SIM	EPA-8260 SIM	Vinyl Chloride	0.0105	0.0314	0.031	µg/L	75-01-4
	EPA-8260 SIM	Carbon Tetrachloride	0.00832	0.0250	0.10	µg/L	56-23-5
	EPA-8260 SIM	Chloroform	0.0462	0.10	0.10	µg/L	67-66-3
	EPA-8260 SIM	Trichloroethene	0.0178	0.020	0.02	µg/L	79-01-6
	EPA-8260 SIM	1,2-Dichloropropane	0.0212	0.063	0.10	µg/L	78-87-5
	EPA-8260 SIM	Trans-1,3-Dichloropropene	0.0192	0.0576	0.10	µg/L	10061-02-6
	EPA-8260 SIM	1,1,2-Trichloroethane	0.0173	0.052	0.10	µg/L	79-00-5
	EPA-8260 SIM	Dibromochloromethane	0.0248	0.074	0.10	µg/L	124-48-1
	EPA-8260 SIM	1,1,1,2-Tetrachloroethane	0.0292	0.087	0.10	µg/L	630-20-6
	EPA-8260 SIM	1,1,2,2-Tetrachloroethane	0.00963	0.029	0.10	µg/L	79-34-5
	EPA-8260 SIM	1,2,4-Trichlorobenzene	0.0179	0.047	0.10	µg/L	120-82-1
SVOCs	EPA-8270D	Pyridine	1.10	2.00	2.00	µg/L	110-86-1
	EPA-8270D	N-Nitrosodimethylamine	0.502	1.51	2.00	µg/L	62-75-9
	EPA-8270D	Phenol	0.350	1.05	2.00	µg/L	108-95-2
	EPA-8270D	Aniline	0.861	2.00	2.00	µg/L	62-53-3
	EPA-8270D	Bis(2-Chloroethyl)Ether	0.313	0.94	2.00	µg/L	111-44-4
	EPA-8270D	2-Chlorophenol	0.284	0.85	2.00	µg/L	95-57-8
	EPA-8270D	Benzyl Alcohol	0.343	1.03	2.00	µg/L	100-51-6
	EPA-8270D	2-Methylphenol	0.431	1.29	2.00	µg/L	95-48-7
	EPA-8270D	Bis(2-Chloroisopropyl)Ether	0.207	0.62	2.00	µg/L	39638-32-9
	EPA-8270D	3&4-Methylphenol	0.270	0.810	2.00	µg/L	15831-10-4
	EPA-8270D	N-Nitroso-Di-N-Propylamine	0.702	2.00	2.00	µg/L	621-64-7
	EPA-8270D	Hexachloroethane	0.667	2.00	2.00	µg/L	67-72-1
	EPA-8270D	Nitrobenzene	0.396	1.19	2.00	µg/L	98-95-3
	EPA-8270D	Isophorone	0.391	1.17	2.00	µg/L	78-59-1
	EPA-8270D	2-Nitrophenol	0.381	1.14	2.00	µg/L	88-75-5
	EPA-8270D	2,4-Dimethylphenol	0.291	0.87	2.00	µg/L	105-67-9
	EPA-8270D	Benzoic Acid	0.814	2.44	10.0	µg/L	65-85-0
	EPA-8270D	Bis(2-Chloroethoxy)Methane	0.350	1.05	2.00	µg/L	111-91-1
	EPA-8270D	2,4-Dichlorophenol	0.262	0.79	2.00	µg/L	120-83-2
	EPA-8270D	4-Chloroaniline	0.628	1.89	2.00	µg/L	106-47-8
	EPA-8270D	2,6-Dichlorophenol	0.251	0.75	2.00	µg/L	87-65-0
	EPA-8270D	4-Chloro-3-Methylphenol	0.396	1.19	2.00	µg/L	59-50-7
	EPA-8270D	Hexachlorocyclopentadiene	0.980	2.00	2.00	µg/L	77-47-4
	EPA-8270D	2,4,6-Trichlorophenol	0.299	0.90	2.00	µg/L	88-06-2
	EPA-8270D	2,4,5-Trichlorophenol	0.511	1.53	2.00	µg/L	95-95-4
	EPA-8270D	2-Chloronaphthalene	0.301	0.90	2.00	µg/L	91-58-7
	EPA-8270D	2-Nitroaniline	0.254	0.76	2.00	µg/L	88-74-4
	EPA-8270D	Dimethylphthalate	0.229	0.69	2.00	µg/L	131-11-3
	EPA-8270D	2,6-Dinitrotoluene	0.607	1.82	2.00	µg/L	606-20-2
	EPA-8270D	3-Nitroaniline	0.451	1.35	5.00	µg/L	99-09-2
	EPA-8270D	2,4-Dinitrophenol	0.978	2.93	10.0	µg/L	51-28-5

TABLE C-6
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CLOSED CITY OF YAKIMA LANDFILL SITE

Chemical Class	Method	Analyte	MDL	PQL	RL	Units	CAS
SVOCs (cont.)	EPA-8270D	4-Nitrophenol	1.51	2.00	2.00	µg/L	100-02-7
	EPA-8270D	Dibenzofuran	0.170	0.51	2.00	µg/L	132-64-9
	EPA-8270D	2,4-Dinitrotoluene	0.259	0.78	2.00	µg/L	121-14-2
	EPA-8270D	2,3,4,6-Tetrachlorophenol	0.352	1.06	2.00	µg/L	58-90-2
	EPA-8270D	Diethylphthalate	0.265	0.80	2.00	µg/L	84-66-2
	EPA-8270D	4-Chlorophenyl-Phenylether	0.245	0.74	2.00	µg/L	7005-72-3
	EPA-8270D	4-Nitroaniline	0.752	2.00	2.00	µg/L	100-01-6
	EPA-8270D	4,6-Dinitro-2-Methylphenol	0.832	2.00	2.00	µg/L	534-52-1
	EPA-8270D	N-Nitrosodiphenylamine	0.308	0.92	2.00	µg/L	86-30-6
	EPA-8270D	Azobenzene	0.545	1.63	2.00	µg/L	103-33-3
	EPA-8270D	4-Bromophenyl-Phenylether	0.262	0.79	2.00	µg/L	101-55-3
	EPA-8270D	Carbazole	0.554	1.66	2.00	µg/L	86-74-8
	EPA-8270D	Di-N-Butylphthalate	0.277	0.83	2.00	µg/L	84-74-2
	EPA-8270D	Butylbenzylphthalate	0.222	0.67	2.00	µg/L	85-68-7
	EPA-8270D	3,3-Dichlorobenzidine	1.50	2.00	2.00	µg/L	91-94-1
	EPA-8270D	Bis(2-Ethylhexyl)Phthalate	0.269	0.81	2.00	µg/L	117-81-7
	EPA-8270D	Di-N-Octylphthalate	0.291	0.87	2.00	µg/L	117-84-0
	PAHs	EPA-8270 SIM	Naphthalene	0.00383	0.0115	0.02	µg/L
EPA-8270 SIM		2-Methylnaphthalene	0.00436	0.0131	0.02	µg/L	91-57-6
EPA-8270 SIM		1-Methylnaphthalene	0.00328	0.0098	0.02	µg/L	90-12-0
EPA-8270 SIM		Acenaphthylene	0.00985	0.0296	0.02	µg/L	208-96-8
EPA-8270 SIM		Acenaphthene	0.00861	0.0258	0.02	µg/L	83-32-9
EPA-8270 SIM		Fluorene	0.0141	0.0421	0.02	µg/L	86-73-7
EPA-8270 SIM		Pentachlorophenol	0.0773	0.232	0.5	µg/L	87-86-5
EPA-8270 SIM		Phenanthrene	0.00744	0.0224	0.02	µg/L	85-01-8
EPA-8270 SIM		Anthracene	0.00911	0.0273	0.02	µg/L	120-12-7
EPA-8270 SIM		Fluoranthene	0.00442	0.0133	0.02	µg/L	206-44-0
EPA-8270 SIM		Pyrene	0.00375	0.0113	0.02	µg/L	129-00-0
EPA-8270 SIM		Benzo[A]Anthracene	0.00314	0.00940	0.02	µg/L	56-55-3
EPA-8270 SIM		Chrysene	0.00315	0.00940	0.02	µg/L	218-01-9
EPA-8270 SIM		Benzo[B]Fluoranthene	0.00242	0.00730	0.02	µg/L	205-99-2
EPA-8270 SIM		Benzo[K]Fluoranthene	0.00791	0.0237	0.02	µg/L	207-08-9
EPA-8270 SIM		Benzo[A]Pyrene	0.00346	0.0104	0.02	µg/L	50-32-8
EPA-8270 SIM		Indeno[1,2,3-Cd]Pyrene	0.00546	0.0164	0.02	µg/L	193-39-5
EPA-8270 SIM	Dibenz[A,H]Anthracene	0.00422	0.0127	0.02	µg/L	53-70-3	
EPA-8270 SIM	Benzo[G,H,I]Perylene	0.00554	0.0166	0.02	µg/L	191-24-2	

EPA = U.S. Environmental Protection Agency

HCID = hydrocarbon identification

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyls

SGC = silica gel cleanup

SVOCs = semivolatile organic compounds

TPH = total petroleum hydrocarbons

TPH-Dx = diesel-range extended petroleum hydrocarbons

TPH-G = gasoline-range petroleum hydrocarbons

TDS = total dissolved solids

TOS = total organic carbon

VOCs = volatile organic compounds

TABLE C-7
MEASUREMENT QUALITY OBJECTIVES
CLOSED CITY OF YAKIMA LANDFILL

Table C-7a. VOCs by 8260 and 8260-SIM

MQO	Data Quality Indicator	Acceptance Criteria
Precision - Field	Field Duplicate Sample (groundwater only)	RPD <20%
Accuracy/Precision – Laboratory	LCS and LCSD	Table C-3 – Laboratory Limits
	Laboratory Duplicate	Table C-3 – Laboratory Limits
	MS and MSD	Table C-3 – Laboratory Limits
Accuracy/Bias – Laboratory	Surrogates	Table C-3 – Laboratory Limits
Accuracy – Field	Trip Blanks	No target analytes detected above the PQL
Completeness	Not Applicable	Number of unqualified results ≥ 95%
Sensitivity	Not Applicable	MDLs for target analytes ≤ project screening limit

Table C-7b. SVOCs by 8270 and 8270-SIM

MQO	Data Quality Indicator	Acceptance Criteria
Precision - Field	Field Duplicate Sample (groundwater only)	RPD <20%
Accuracy/Precision – Laboratory	LCS and LCSD	Table C-3 – Laboratory Limits
	Laboratory Duplicate	Table C-3 – Laboratory Limits
	MS and MSD	Table C-3 – Laboratory Limits
Accuracy/Bias – Laboratory	Surrogates	Table C-3 – Laboratory Limits
Completeness	Not Applicable	Number of unqualified results ≥ 95%
Sensitivity	Not Applicable	MDLs for target analytes ≤ project screening limit

Table C-7c. Metals by 200.8, 6010B, 7470, 7471, and 7196

MQO	Data Quality Indicator	Acceptance Criteria
Precision - Field	Field Duplicate Sample (groundwater only)	RPD <20%
Accuracy/Precision – Laboratory	LCS and LCSD	Table C-3 – Laboratory Limits
	Laboratory Duplicate	Table C-3 – Laboratory Limits
	MS and MSD	Table C-3 – Laboratory Limits
Completeness	Not Applicable	Number of unqualified results ≥ 95%
Sensitivity	Not Applicable	MDLs for target analytes ≤ project screening limit

TABLE C-7
MEASUREMENT QUALITY OBJECTIVES
CLOSED CITY OF YAKIMA LANDFILL

Table C-7d. Pesticides by 8081

MQO	Data Quality Indicator	Acceptance Criteria
Precision - Field	Field Duplicate Sample (groundwater only)	RPD <20%
Accuracy/Precision – Laboratory	LCS and LCSD	Table C-3 – Laboratory Limits
	Laboratory Duplicate	Table C-3 – Laboratory Limits
	MS and MSD	Table C-3 – Laboratory Limits
Accuracy/Bias – Laboratory	Surrogates	Table C-3 – Laboratory Limits
Completeness	Not Applicable	Number of unqualified results ≥ 95%
Sensitivity	Not Applicable	MDLs for target analytes ≤ project screening limit

Table C-7e. PCBs by 8082

MQO	Data Quality Indicator	Acceptance Criteria
Precision - Field	Field Duplicate Sample (groundwater only)	RPD <20%
Accuracy/Precision – Laboratory	LCS and LCSD	Table C-3 – Laboratory Limits
	Laboratory Duplicate	Table C-3 – Laboratory Limits
	MS and MSD	Table C-3 – Laboratory Limits
Accuracy/Bias – Laboratory	Surrogates	Table C-3 – Laboratory Limits
Completeness	Not Applicable	Number of unqualified results ≥ 95%
Sensitivity	Not Applicable	MDLs for target analytes ≤ project screening limit

Table C-7f. TPH by NWTPH-Dx, -Gx, and HCID

MQO	Data Quality Indicator	Acceptance Criteria
Precision - Field	Field Duplicate Sample (groundwater only)	RPD <20%
Accuracy/Precision – Laboratory	LCS and LCSD	Table C-3 – Laboratory Limits
	Laboratory Duplicate	Table C-3 – Laboratory Limits
	MS and MSD	Table C-3 – Laboratory Limits
Accuracy/Bias – Laboratory	Surrogates	Table C-3 – Laboratory Limits
Accuracy – Field	Trip Blanks	No target analytes detected above the PQL
Completeness	Not Applicable	Number of unqualified results ≥ 95%
Sensitivity	Not Applicable	MDLs for target analytes ≤ project screening limit

TABLE C-7
MEASUREMENT QUALITY OBJECTIVES
CLOSED CITY OF YAKIMA LANDFILL

Table C-7g. Chloride, Fluoride, Nitrate, Nitrite, and Sulfate by EPA 300.0

MQO	Data Quality Indicator	Acceptance Criteria
Precision - Field	Field Duplicate Sample (groundwater only)	RPD <20%
Accuracy/Precision – Laboratory	LCS and LCSD	Table C-3 – Laboratory Limits
	Laboratory Duplicate	Table C-3 – Laboratory Limits
	MS and MSD	Table C-3 – Laboratory Limits
Completeness	Not Applicable	Number of unqualified results ≥ 95%
Sensitivity	Not Applicable	MDLs for target analytes ≤ project screening limit

EPA = U.S. Environmental Protection Agency

HCID = hydrocarbon identification

LCS/LCSD = laboratory control sample/laboratory control sample duplicate

MDL = method detection limit

MQO = measurement quality objective

MS/MSD = matrix spike/matrix spike duplicate

PCB = polychlorinated biphenyl

PQL = practical quantitation limit

RPD = relative percent difference

SIM = selected ion monitoring

SVOC = semivolatile organic compound

TPH = total petroleum hydrocarbons

VOC = volatile organic compound

**TABLE C-8
LABORATORY CONTROL LIMITS
CLOSED CITY OF YAKIMA LANDFILL SITE**

Method	Matrix	Analyte	Analyte Type	Quality Control Spike Lower Control Limit	Quality Control Spike Upper Control Limit	Quality Control Relative Percent Difference (RPD) Control Limit
NWTPH-HCID	Soil	BCB	SUR	51	143	--
NWTPH-HCID	Soil	C25	SUR	50	147	--
NWTPH-GX	Soil	Gasoline Range Organics	SUR	66.5	122.7	9.14
NWTPH-GX	Soil	TFT	SUR	60	140	--
NWTPH-DX	Soil	Pentacosane	SUR	58	134	--
NWTPH-DX	Soil	TPH-Diesel Range	TRG	76.2	112	12
EPA-6020	Soil	Arsenic	TRG	80	120	8.91
EPA-6020	Soil	Barium	TRG	80	120	10
EPA-6020	Soil	Cadmium	TRG	80	120	9.2
EPA-6020	Soil	Chromium	TRG	80	120	9.6
EPA-7196	Soil	Chromium IV	TRG	91	114	7.8
EPA-6020	Soil	Iron	TRG	80	120	9.06
EPA-6020	Soil	Lead	TRG	80	120	9.36
EPA-6020	Soil	Manganese	TRG	80	120	9.79
EPA-6020	Soil	Selenium	TRG	80	120	10.7
EPA-6020	Soil	Silver	TRG	80	120	8.71
EPA-6020	Soil	Sodium	TRG	80	120	11.3
EPA-7471	Soil	Mercury	TRG	81.8	117	8.84
EPA-300.0M	Soil	Fluoride	TRG	80	120	25
EPA-300.0M	Soil	Nitrate (as N)	TRG	80	120	25
EPA-300.0M	Soil	Nitrite (as N)	TRG	80	120	25
EPA-8081	Soil	PCB-209	SUR	15	130	25
EPA-8081	Soil	Tetrachloro-m-xylene	SUR	21	112	25
EPA-8081	Soil	A-BHC	TRG	36	139	25
EPA-8081	Soil	G-BHC	TRG	40	142	25
EPA-8081	Soil	B-BHC	TRG	38	142	25
EPA-8081	Soil	Heptachlor	TRG	39	135	25
EPA-8081	Soil	D-BHC	TRG	48	145	25
EPA-8081	Soil	Aldrin	TRG	37	134	25
EPA-8081	Soil	Heptachlor Epoxide	TRG	45	118	25
EPA-8081	Soil	Chlordane	TRG	41	134	25
EPA-8081	Soil	Endosulfan I	TRG	35	121	25
EPA-8081	Soil	4,4'-DDE	TRG	46	141	25
EPA-8081	Soil	Dieldrin	TRG	46	136	25
EPA-8081	Soil	Endrin	TRG	40	152	25
EPA-8081	Soil	4,4'-DDD	TRG	46	146	25
EPA-8081	Soil	Endosulfan II	TRG	39	128	25
EPA-8081	Soil	4,4'-DDT	TRG	46	151	25
EPA-8081	Soil	Endrin Aldehyde	TRG	32	132	25
EPA-8081	Soil	Endosulfan Sulfate	TRG	43	138	25
EPA-8081	Soil	Methoxychlor	TRG	42	147	25
EPA-8081	Soil	Toxaphene	TRG	53	133	25

**TABLE C-8
LABORATORY CONTROL LIMITS
CLOSED CITY OF YAKIMA LANDFILL SITE**

Method	Matrix	Analyte	Analyte Type	Quality Control Spike Lower Control Limit	Quality Control Spike Upper Control Limit	Quality Control Relative Percent Difference (RPD) Control Limit
EPA-8082	Soil	PCB-209	SUR	43	148	--
EPA-8082	Soil	PCB-aroclor 1016	TRG	42	122	--
EPA-8082	Soil	PCB-aroclor 1260	TRG	50	124	--
EPA-8260	Soil	1,2-Dichloroethane-d4	SUR	72.4	138	--
EPA-8260	Soil	p-Bromofluorobenzene	SUR	73	123	--
EPA-8260	Soil	Toluene-d8	SUR	69.4	126	--
EPA-8260	Soil	1,1-Dichloroethene	TRG	73	138	22
EPA-8260	Soil	Benzene	TRG	75	138	21
EPA-8260	Soil	Toluene	TRG	76	134	21
EPA-8260	Soil	Chlorobenzene	TRG	79	128	20
EPA-8260 SIM	Soil	Trichloroethene	TRG	75	136	20
EPA-8260 SIM	Soil	1,2,4-Trichlorobenzene	TRG	51.3	130	14.1
EPA-8270	Soil	2,4,6-Tribromophenol	SUR	14.8	142	--
EPA-8270	Soil	2-Fluorobiphenyl	SUR	46.2	121	--
EPA-8270	Soil	2-Fluorophenol	SUR	47.1	119	--
EPA-8270	Soil	Nitrobenzene-d5	SUR	38	128	--
EPA-8270	Soil	Phenol-d5	SUR	35.5	140	--
EPA-8270	Soil	Terphenyl-d14	SUR	50.2	131	--
EPA-8270	Soil	Phenol	TRG	36.1	131	14.1
EPA-8270	Soil	2-Chlorophenol	TRG	59.9	111	10.6
EPA-8270	Soil	N-Nitrosodi-n-propylamine	TRG	31.6	134	16.5
EPA-8270	Soil	4-Chloro-3-Methylphenol	TRG	49.2	135	12.1
EPA-8270	Soil	4-Nitrophenol	TRG	29.8	137	18.8
EPA-8270	Soil	2,4-Dinitrotoluene	TRG	55.3	130	13.9
EPA-8270	Soil	1,4-Dichlorobenzene	TRG	58	120	11.7
EPA-8270	Soil	Acenaphthene	TRG	49.3	117	13.3
EPA-8270	Soil	Pyrene	TRG	57.4	145	15.8
EPA-8270 SIM	Soil	2,4,6-Tribromophenol	SUR	15.9	130	25
EPA-8270 SIM	Soil	Terphenyl-d14	SUR	28.9	157	25
EPA-8270 SIM	Soil	Naphthalene	TRG	49.2	140	17.3
EPA-8270 SIM	Soil	Acenaphthene	TRG	55	147	19
EPA-8270 SIM	Soil	Pentachlorophenol	TRG	5	139	43.4
EPA-8270 SIM	Soil	Pyrene	TRG	47.9	176	21.3
EPA-8270 SIM	Soil	Benzo(ghi)perylene	TRG	40.4	143	22.8
NWTPH-HCID	Water	BCB	SUR	50	150	--
NWTPH-HCID	Water	C25	SUR	50	150	--
NWTPH-GX	Water	Gasoline Range Organics	SUR	66.5	122.7	9.14
NWTPH-GX	Water	TFT	SUR	60	140	--
NWTPH-DX	Water	C25	SUR	60	126	--
NWTPH-DX	Water	Pentacosane	SUR	60	126	--
NWTPH-DX	Water	TPH-Diesel Range	TRG	67	125.2	10.8

**TABLE C-8
LABORATORY CONTROL LIMITS
CLOSED CITY OF YAKIMA LANDFILL SITE**

Method	Matrix	Analyte	Analyte Type	Quality Control Spike Lower Control Limit	Quality Control Spike Upper Control Limit	Quality Control Relative Percent Difference (RPD) Control Limit
EPA-200.8	Water	Arsenic	TRG	89.1	110	3.36
EPA-200.8	Water	Barium	TRG	88.5	108	3.32
EPA-200.8	Water	Cadmium	TRG	89.4	109	2.7
EPA-200.8	Water	Calcium	TRG	80	120	3
EPA-200.8	Water	Chromium	TRG	86.2	107	2.97
EPA-7196	Water	Chromium IV	TRG	91	114	7.8
EPA-200.8	Water	Iron	TRG	80	120	3.91
EPA-200.8	Water	Lead	TRG	87.5	107	2.43
EPA-200.8	Water	Magnesium	TRG	80	120	2.85
EPA-200.8	Water	Manganese	TRG	82.2	110	4.52
EPA-200.8	Water	Potassium	TRG	80	120	3.15
EPA-200.8	Water	Selenium	TRG	90.2	113	4.68
EPA-200.8	Water	Silver	TRG	80	120	2.74
EPA-200.8	Water	Sodium	TRG	80	103	3.47
EPA-7470	Water	Mercury	TRG	80.6	118	7.94
SM2540C	Water	Total Dissolved Solids	TRG	85	115	--
EPA-300.0	Water	Chloride	TRG	80	120	25
EPA-300.0	Water	Fluoride	TRG	80	120	25
EPA-300.0	Water	Nitrate (as N)	TRG	80	120	25
EPA-300.0	Water	Nitrite (as N)	TRG	80	120	25
EPA-300.0	Water	Sulfate	TRG	80	120	25
EPA-350.1	Water	Ammonia	TRG	80	115	--
SM2320B	Water	Alkalinity as CaCO3, Total	TRG	90	110	--
SM5310C	Water	Total Organic Carbon	TRG	83	117	--
EPA-8081	Water	DCB	SUR	19	127	30
EPA-8081	Water	PCB-209	SUR	19	127	25
EPA-8081	Water	TCMX	SUR	20	106	30
EPA-8081	Water	Tetrachloro-m-xylene	SUR	20	106	25
EPA-8081	Water	A-BHC	TRG	36	122	30
EPA-8081	Water	G-BHC	TRG	44	117	30
EPA-8081	Water	B-BHC	TRG	42	125	30
EPA-8081	Water	Heptachlor	TRG	40	115	25
EPA-8081	Water	D-BHC	TRG	48	123	30
EPA-8081	Water	Aldrin	TRG	10	102	25
EPA-8081	Water	Heptachlor Epoxide	TRG	49	109	25
EPA-8081	Water	Chlordane	TRG	45	115	25
EPA-8081	Water	Endosulfan I	TRG	35	115	25
EPA-8081	Water	4,4'-DDE	TRG	41	116	25
EPA-8081	Water	Dieldrin	TRG	50	115	25
EPA-8081	Water	Endrin	TRG	48	126	25
EPA-8081	Water	4,4'-DDD	TRG	33	132	25
EPA-8081	Water	Endosulfan II	TRG	28	128	25
EPA-8081	Water	4,4'-DDT	TRG	42	143	25
EPA-8081	Water	Endrin Aldehyde	TRG	27	104	25
EPA-8081	Water	Endosulfan Sulfate	TRG	38	118	25
EPA-8081	Water	Methoxychlor	TRG	43	143	25
EPA-8081	Water	Toxaphene	TRG	36	137	25

TABLE C-8
LABORATORY CONTROL LIMITS
CLOSED CITY OF YAKIMA LANDFILL SITE

Method	Matrix	Analyte	Analyte Type	Quality Control Spike Lower Control Limit	Quality Control Spike Upper Control Limit	Quality Control Relative Percent Difference (RPD) Control Limit
EPA-8082	Water	DCB	SUR	39	140	25
EPA-8082	Water	PCB-209	SUR	39	140	25
EPA-8082	Water	PCB-1016	TRG	60	103	25
EPA-8082	Water	PCB-1260	TRG	60	103	25
EPA-8260	Water	1,2-Dichloroethane-d4	SUR	71	130	--
EPA-8260	Water	4-Bromofluorobenzene	SUR	78	120	--
EPA-8260	Water	Toluene-d8	SUR	80	120	--
EPA-8260	Water	1,1-Dichloroethene	TRG	72.5	136	20.5
EPA-8260	Water	Benzene	TRG	74.7	143	20.5
EPA-8260	Water	Toluene	TRG	71.7	139	20.5
EPA-8260	Water	Chlorobenzene	TRG	73	131	20.5
EPA-8260 SIM	Water	Trichloroethene	TRG	74.4	141	20.5
EPA-8260 SIM	Water	1,2,4-Trichlorobenzene	TRG	29.4	120	23
EPA-8270	Water	2,4,6-Tribromophenol	SUR	45	122	--
EPA-8270	Water	2-Fluorobiphenyl	SUR	46	100	--
EPA-8270	Water	2-Fluorophenol	SUR	29	89	--
EPA-8270	Water	Nitrobenzene-d5	SUR	53	125	--
EPA-8270	Water	Phenol-d5	SUR	5	88	--
EPA-8270	Water	Terphenyl-d14	SUR	58	132	--
EPA-8270	Water	Phenol	TRG	5	84	22
EPA-8270	Water	2-Chlorophenol	TRG	52.2	111	17
EPA-8270	Water	N-Nitroso-Di-N-Propylamine	TRG	42.2	119	14
EPA-8270	Water	4-Chloro-3-Methylphenol	TRG	59.1	113	18
EPA-8270	Water	4-Nitrophenol	TRG	5	63	25
EPA-8270	Water	2,4-Dinitrotoluene	TRG	53.1	136	18
EPA-8270	Water	1,4-Dichlorobenzene	TRG	27.1	114	21
EPA-8270	Water	Acenaphthene	TRG	41	107	13
EPA-8270	Water	Pyrene	TRG	18	136	18
EPA-8270 SIM	Water	2,4,6-Tribromophenol	SUR	12	151	25
EPA-8270 SIM	Water	Terphenyl-d14	SUR	50	147	25
EPA-8270 SIM	Water	Naphthalene	TRG	36	118	27
EPA-8270 SIM	Water	Acenaphthene	TRG	37	125	29
EPA-8270 SIM	Water	Pentachlorophenol	TRG	14	142	21
EPA-8270 SIM	Water	Pyrene	TRG	59	156	22
EPA-8270 SIM	Water	Benzo(ghi)perylene	TRG	43	140	21

EPA = U.S. Environmental Protection Agency

HCID = hydrocarbon identification

PCB = polychlorinated biphenyl

SIM = selected ion monitoring

SUR = surrogate

TPH = total petroleum hydrocarbons

TRG = target analyte

Health and Safety Plan



WORK LOCATION PERSONNEL PROTECTION AND SAFETY EVALUATION FORM

Attach Pertinent Documents/Data Fill in Blanks As Appropriate

Job No.:	1148008.010, 020, 030		
Prepared by:	Evelyn Ives; Revised by Stephanie Renando	Reviewed by:	Christine Kimmel
Date:	August 5, 2014; Revised July 20, 2015	Date:	August 8, 2014; July 20, 2015

A. WORK LOCATION DESCRIPTION

1. **Project Name:** Closed City of Yakima Landfill Site (Site)
2. **Location:** Yakima, Washington
3. **Anticipated Activities:** Collection of soil, soil vapor/landfill gas, and groundwater samples using hollow-stem auger drilling methods; installation of monitoring wells and landfill gas (LFG) probes ; collection of groundwater samples from new and existing monitoring wells; test pit exploration in and adjacent to a former landfill containing municipal solid waste (MSW) using an excavator.
4. **Size:** Approximately 240 acres [overall Mill Site (former Boise Cascade Mill and Plywood Facility) which includes the subject Site (the closed City of Yakima Landfill Site)]
5. **Surrounding Population:** Residential, industrial, and commercial
6. **Buildings/Homes/Industry:** The Site consists of the former City of Yakima MSW landfill. Two vacant buildings remain onsite including a small fire suppression pump house, and a scale house located about 20 feet (ft) southwest of the Site. The overall Mill Site (which the Site is part of) consists of a variety of existing buildings (used for administration and management of current tenant operations) and remnants of various former building foundations and slabs.
7. **Topography:** Level with slight downward gradient to the east
8. **Anticipated Weather:** Variable weather, wind, rain, sun; average temperature 45-90°F, with seasonal highs around 100°F
9. **Unusual Features:** The Site is located at the southern end of the former Boise Cascade Sawmill and Plywood Facility Property (Mill Site). Boise Cascade closed mill operations in 2006, but continued to store and chip logs until 2010. Prior to 1972, a former mill log pond was filled with MSW by the City of

Yakima (the area that managed MSW is the Site). The former landfill's surface consists of a combination of predominantly dirt and wood debris. Underlying fill soils (sandy silt or silty gravel) are exposed in areas near the former log storage operations.

- 10. Site History:** The City of Yakima operated an unlined MSW landfill at the southern part of the Mill Site between 1963 and approximately 1972. The City of Yakima reportedly discontinued operations at the Site in 1970.

From 2008 to 2012, several subsurface investigations were completed at the Site which included collection and analysis of groundwater, LFG, and surface water samples. In general, the primary contaminants of concern include total petroleum hydrocarbons [TPH; gasoline-, diesel-, and motor oil-range constituents (TPH-G, TPH-D, and TPH-O, respectively)], volatile organic compounds (VOCs), such as vinyl chloride, and metals. Methane gas was detected above the lower explosive limit (LEL) in LFG samples from the former landfill and the areas of wood waste in the former Mill Site.

In addition to the contaminants of concern identified at the Site, soil and groundwater sampling for polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), chlorinated pesticides, and conventional parameters indicative of landfill conditions is planned. Additional LFG sampling will also be conducted.

B. HAZARD DESCRIPTION

1. **Background Review:** Complete Partial

If partial, why?

2. **Hazardous Level:** B C D Unknown

Justification: Existing data regarding site conditions

3. **Types of Hazards:** (Attach additional sheets as necessary)

- A. Chemical Inhalation Explosive
 Biological Ingestion O2 Def. Skin Contact

Describe: Exposure to chemical hazards including petroleum hydrocarbons, VOCs, metals, PCBs, pesticides, polycyclic aromatic hydrocarbons (PAHs), and LFG (e.g., methane, carbon dioxide, carbon monoxide, hydrogen, and hydrogen sulfide). Nitrile gloves will be worn. Respirators will be kept on site and will be worn if necessary (as described below). Combustible gas indicators (CGI) will be used to monitor air in the work area (as described below). MSW may contain biological matter, nitrile gloves to be worn to minimize skin contact.

- B. Physical Cold Stress Noise Heat Stress Other

Describe: Noise and physical hazards associated with working around drill rig. Potential trip and fall hazardous associated with working in areas with demolition debris will be minimized where possible. Potential weather stress associated with working outside during the various months of the year.

C. Radiation

Describe:

4. Nature of Hazards:

Air

Describe: Exposure to VOCs, methane gas, hydrogen sulfide gas, and TPH is possible. Breathing zone vapors will be analyzed with a multi-gas meter and photoionization detector (PID). Exposure to windblown dust with impacts from metals, PCBs, pesticides, PAH is possible; therefore, water will be applied to minimize the generation of dust.

Soil

Describe: Exposure to chemicals of potential concerns (metals, VOCs, TPH, PCBs, pesticides, PAHs, and TPH) in the soil is possible. Nitrile gloves will be worn when handling soil and equipment. Conduct screening with multi-gas with PID meter, along with soil screening for impacted soil conditions. Water may be applied to minimize dust.

Surface Water

Describe: Small ponds and areas of limited standing water are present at the Site; no surface water sampling is currently scheduled.

Groundwater

Describe: Exposure to chemicals of concern (metals, VOCs, TPH, PCBs, pesticides, PAHs, and TPH) in groundwater is possible. Nitrile gloves will be worn when handling groundwater samples and equipment.

Other

Describe: Soil vapor/landfill gasses may cause oxygen deficiency in underground trenches, vaults, conduits and structures. Fires may start spontaneously from exposed and/or decomposing refuse. Possibility of caving trenches when working over or in refuse fills.

5. Chemical Contaminants of Concern N/A

Contaminant	PEL (ppm)	I.D.L.H. (ppm)	Source/Quantity Characteristics	Route of Exposure	Symptoms of Acute Exposure	Instruments Used to Monitor Contaminant
Total Petroleum Hydrocarbons	100 (as petroleum distillates)	400 (as petroleum distillates)	Historical GW max conc. = 2.6 ppm; soil max conc. = 57,000 mg/kg	Inhalation, ingestion, dermal contact, eye contact	Irritation of eyes, nose, throat; nausea; dizziness; headache; dry cracked skin	Visual, PID meter
Metals (Arsenic)	0.002 mg/m ³	5.0 mg/m ³	Present in groundwater (max conc. = 12.1 ppb)	Inhalation, eye contact, dermal contact	Skin and mucous membrane irritation; respiration irritation (potential occupational carcinogen)	Dust Control
PCBs	0.001 mg/m ³	5 mg/m ³	Possibly present in soil and groundwater at unknown concentrations	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritated eyes; liver damage; reproductive effects	Dust Control
Volatile Organic Compounds (Benzene)	1.0	500	Possibly present in soil and groundwater at unknown concentrations	Inhalation, ingestion, dermal contact	Irritated eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait (carcinogen)	PID meter
Methane	10% LEL	N/A	Present in subsurface (max conc. = 77.7 % by volume)	Inhalation	Asphyxiant	Combustible Gas Meter
Hydrogen Sulfide	10	100	Possibly present in subsurface	Inhalation	Irritated eyes/respiratory system, apnea, coma, convulsions, dizziness, headache	Combustible Gas Meter
Pesticides (Carbaryl)	5 mg/m ³	100 mg/m ³	Possibly present in subsurface	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritated eyes/respiratory system, apnea, coma, convulsions, dizziness, vomiting	Dust Control

Contaminant	PEL (ppm)	I.D.L.H. (ppm)	Source/Quantity Characteristics	Route of Exposure	Symptoms of Acute Exposure	Instruments Used to Monitor Contaminant
PAHs (Benzo(a) pyrene)	0.1 mg/m ³	80 mg/m ³	Possibly present in subsurface	Inhalation, skin and eye contact	Dermatitis, bronchitis (potential carcinogen)	Dust Control

Notes:

6. Physical Hazards of Concern N/A

Hazard	Description	Location	Procedures Used to Monitor Hazard
Moving parts of drill rig, falling and flying objects	Drill rigs of all types have many moving parts that can pinch, crush, or come loose from the rig and cause injury.	Near drill rig	Alert observation of surroundings. Minimize time spent near drill rig, no loose clothing. Use of safety glasses, reflective vest, hard hat, and steel-toed boots. Make eye contact with the driller prior to advancing near the drill rig.
Noise	Drill rigs operate at a high noise volume	Near drill rig	Wear hearing protection whenever drill rig is operating.
Explosion	Presence of methane in subsurface	Drill location	Verify drill rig is electrically ground to minimize potential sparks. If possible, apply water to borehole to minimize release of methane gas and spark potential from drill casing.

Hazard	Description	Location	Procedures Used to Monitor Hazard
Slips, trips, and falls	Ground surface potentially obscured by demolition debris	Work area	Alert observation of surroundings. Clear ground surface in sampling areas.
Subsurface sampling	Lifting, slip/trip, and pinch points	Work Area	Use proper lifting techniques. Be aware of surroundings and variations in ground surface. Keep fingers out of tight areas that could result in pinch points.
Overhead and Underground Utilities	Damage to utilities through test pit excavation.	Work Area	Client will provide utility maps and a public and private utility locating service will be conducted. No raised tower work to be conducted within 20 ft of the overhead power lines.
Weather Illnesses	Heat or cold related illnesses	Work Area	Have drinking water accessible, wear appropriate clothing (light for heat, warm for cold), wear sunscreen protection, avoid caffeine, and take short breaks as needed.
Travel to and from site	Operating motor vehicle in traffic on highways and rural roads	To and from site and Landau Associates office	Operate motor vehicle while well rested and physically able to drive safely. Conduct pre-trip vehicle inspection, all vehicles to be maintained and in good working order. Obey all traffic laws, including no cell phone use while driving. Secure all cargo properly to avoid shifting. Allow sufficient time for travel to site at safe speeds. Engage emergency brake when parking vehicles. Establish planned route prior to departure.

Hazard	Description	Location	Procedures Used to Monitor Hazard
Trenching and excavations	Moving parts of excavation equipment, falling and flying objects, striking hazard. Falling in excavation, excavation sidewall collapse.	Near excavation	Alert observation of surroundings, minimize time spent near excavation equipment, no loose clothing, wear approved personal protective equipment (PPE), make eye contact with Operator prior to advancing near equipment. Stay away from excavation edge, use standard sloping of excavation sidewalls for excavation over 4 ft deep or install proper shoring devices, if needed.

7. **Work Location Instrument Readings** N/A

Location: Workspace air

Percent O ₂ :	_____	Percent LEL:	_____
Radioactivity:	_____	PID:	_____
FID:	_____	Other:	_____
Other:	_____	Other:	_____
Other:	_____	Other:	_____

Location: _____

Percent O ₂ :	_____	Percent LEL:	_____
Radioactivity:	_____	PID:	_____
FID:	_____	Other:	_____
Other:	_____	Other:	_____
Other:	_____	Other:	_____

Location: _____

Percent O ₂ :	_____	Percent LEL:	_____
Radioactivity:	_____	PID:	_____
FID:	_____	Other:	_____
Other:	_____	Other:	_____
Other:	_____	Other:	_____

Location: _____

Percent O ₂ :	_____	Percent LEL:	_____
Radioactivity:	_____	PID:	_____
FID:	_____	Other:	_____
Other:	_____	Other:	_____
Other:	_____	Other:	_____

8. **Hazards Expected In Preparation For Work Assignment** N/A

Describe:

C. PERSONAL PROTECTIVE EQUIPMENT

1. Level of Protection

A B C D

Location/Activity: A combined PID/CGI will be used to monitor air in the work area. See Attachment A for action levels.

A B C D

Location/Activity:

2. Protective Equipment (specify probable quantity required)

Respirator N/A

SCBA, Airline

Full-Face Respirator

Half-Face Respirator (Cart. organic vapor) (Only if upgrade to Level C per Attachment A)

Escape mask

None

Other:

Other:

Head & Eye N/A

Hard Hat

Goggles

Face Shield

Safety Eyeglasses

Other: Hearing protection

Clothing N/A

Fully Encapsulating Suit

Chemically Resistant Splash Suit

Apron, Specify:

Tyvek Coverall (Only if upgrade to Level C)

Saranex Coverall

Safety Vest

Other:

Hand Protection N/A

Undergloves; Type:

Gloves; Type: Nitrile

Overgloves; Type:

None

Other:

Foot Protection N/A

Neoprene Safety Boots with Steel Toe/Shank

Disposable Overboots

Other: Steel-toed boots

3. **Monitoring Equipment** N/A
- | | |
|----------------------------------------------------|-------------------------------------------|
| <input checked="" type="checkbox"/> CGI | <input checked="" type="checkbox"/> PID |
| <input type="checkbox"/> O ² Meter | <input type="checkbox"/> FID |
| <input type="checkbox"/> Rad Survey | <input checked="" type="checkbox"/> Other |
| <input type="checkbox"/> Detector Tubes (optional) | |
- Type:

D. DECONTAMINATION

PERSONAL DECONTAMINATION

- Required Not Required

If required, describe:

Wash hands and face with water and soap before each break. Minimize hand to mouth actions while onsite.

EQUIPMENT DECONTAMINATION

- Required Not Required

If required, describe and list equipment:

Downhole equipment will be decontaminated between boring locations using a steam cleaner. Non-dedicated sampling equipment will be decontaminated between sampling intervals using a three-step process:

- Remove visual contamination and wash with a mixture of Alconox soap and tap water
- Rinse with tap water
- Rinse with de-ionized water

E. PERSONNEL

	Name	Work Location Title/Task	Medical Current	Fit Test Current
1.	Steve Shaw	Project Geologist	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Matt Moroney	Senior Staff Scientist	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.	Stephanie Renando	Staff Scientist	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Shane Kostka	Technician	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5.	Jeffrey A. Fellows, PE	Senior Associate Engineer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.			<input type="checkbox"/>	<input type="checkbox"/>
7.			<input type="checkbox"/>	<input type="checkbox"/>
8.			<input type="checkbox"/>	<input type="checkbox"/>
9.			<input type="checkbox"/>	<input type="checkbox"/>

Site Safety Coordinator: Steve Shaw; Stephanie Renando

F. ACTIVITIES COVERED UNDER THIS PLAN

Task No.	Description	Preliminary Schedule
1	Hollow-stem auger drilling and soil sampling	September 2014
2	Monitoring well installation	September 2014
3	Test pit exploration into and adjacent to MSW material	October 2014; April 2015
4	Groundwater sampling	September 2014, December 2014, March 2015, June 2015
5	Landfill gas sampling	December 2014, January and June 2015

G. SUBCONTRACTOR'S HEALTH AND SAFETY PROGRAM EVALUATION

N/A

Name and Address of Subcontractor:: Cascade Drilling, LP
 P.O. Box 1184
 Woodinville, Washington 98072

EVALUATION CRITERIA

Item	Adequate	Inadequate	Comments
Medical Surveillance Program	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Personal Protective Equipment Availability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Onsite Monitoring Equipment Availability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Safe Working Procedures Specification	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Training Protocols	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Ancillary Support Procedures (if any)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Emergency Procedures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Evacuation Procedures Contingency Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Decontamination Procedures Equipment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Decontamination Procedures Personnel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

GENERAL HEALTH AND SAFETY PROGRAM EVALUATION: Adequate Inadequate

Additional Comments: Adequate based on requirements of Basic Agreement between Landau Associates and Cascade Drilling

Evaluation Conducted By: Christine Kimmel

Date: August 8, 2014;
July 20, 2015

EMERGENCY FACILITIES AND NUMBERS

Hospital: Yakima Regional Medical & Cardiac Center
110 South 9th Avenue, Yakima, Washington 98902
Emergency: 911

Directions: Attachment B

Telephone: (509) 575-5000

Emergency Transportation Systems (Fire, Police, Ambulance) – 911

Emergency Routes – Map (Attachment B)

Emergency Contacts:

	Offsite	Onsite
Jeffrey Fellow, P.E.	425-778-0907	206-218-6501 (cell)
Christine Kimmel	425-778-0907	206-786-3801 (cell)

In the event of an emergency, do the following:

1. Call for help as soon as possible. Call 911. Give the following information:
 - WHERE the emergency is – use cross streets or landmarks
 - PHONE NUMBER you are calling from
 - WHAT HAPPENED – type of injury
 - WHAT is being done for the victim(s)
 - YOU HANG UP LAST – let the person you called hang up first.

2. If the victim can be moved, paramedics will transport to the hospital. If the injury or exposure is not life-threatening, decontaminate the individual first. If decontamination is not feasible, wrap the individual in a blanket or sheet of plastic prior to transport.

**HEALTH AND SAFETY PLAN
APPROVAL/SIGN OFF FORMAT**

I have read, understood, and agreed with the information set forth in this Health and Safety Plan (and attachments) and discussed in the Personnel Health and Safety briefing.

_____	_____	_____
Name	Signature	Date
_____	_____	_____
Name	Signature	Date
_____	_____	_____
Name	Signature	Date
_____	_____	_____
Name	Signature	Date
_____	_____	_____
Site Safety Coordinator	Signature	Date
_____	_____	_____
Christine Kimmel	Signature	Date
_____	_____	_____
Landau Health and Safety Manager	Signature	Date
_____	_____	_____
Project Manager	Signature	Date

Personnel Health and Safety Briefing Conducted By:

_____	_____	_____
Name	Signature	Date

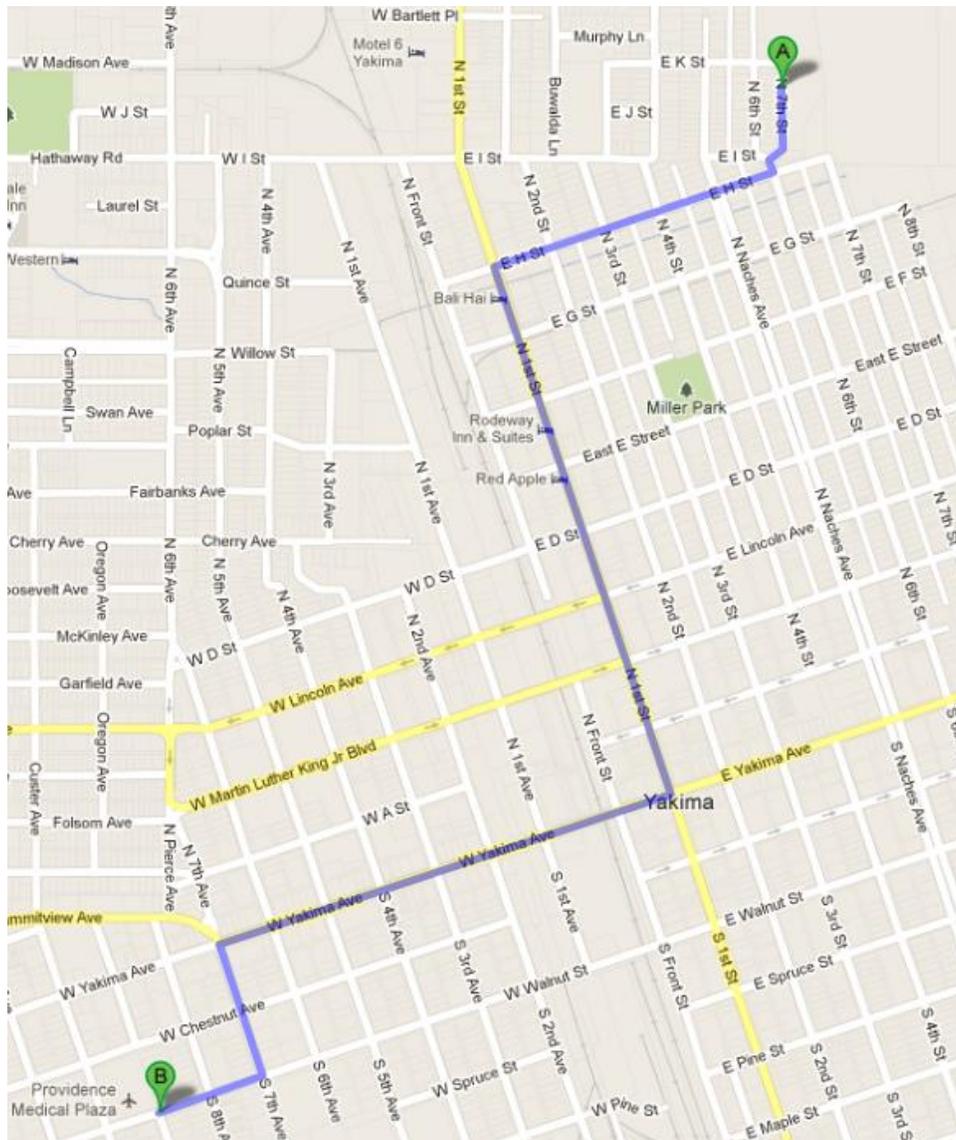
ATTACHMENT A

ACTION LEVELS FOR RESPIRATORY PROTECTION

Monitoring Parameter	Reading	Level of Protection
Organic Vapor Compounds	PID >10 ppm in breathing zone for more than 15 minutes or >35 ppm for momentary peak.	Upgrade to Level C-half face respirator with organic vapor/HEPA cartridge.
	PID>10 and <100 ppm	Stop work until ambient conditions return to background. Proceed with Level C.
	PID >100 ppm	Stop work, contact H&S Manager and install engineering controls.
Methane	>5%LEL	Stop work, allow levels to return to background, verify electrical grounding of equipment, and saturate work area.
	>10% LEL (0.5 % CH ₄)	Evacuate area and call H&S Manager.
Hazardous Dust (metals, PCBs, PAH, pesticides)	Visible dust	Apply water for dust suppression methods.

ATTACHMENT B

MAP AND DIRECTIONS TO HOSPITAL



1. Head south on N 7th St toward E I St
 2. Turn left onto N 6th St
 3. Take the 1st right onto E H St
 4. Turn left onto N 1st St
 5. Turn right onto E Yakima Ave
 6. Turn left onto S 7th Ave
 7. Take the 2nd right onto W Walnut St
- Total distance: 2.2 mi – about 8 mins

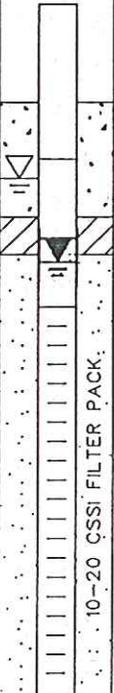
Yakima Regional Medical & Cardiac Center
 110 South 9th Avenue, Yakima, Washington 98902
 Emergency: 911

Groundwater Monitoring Well Construction Logs

PROJECT: BCC/YAKIMA	 CASCADE EARTH SCIENCES, LTD.	PROJECT NUMBER: 363013	MONITORING WELL NUMBER: MW-1
BORING LOCATION: -		LOGGED BY: -	CHECKED BY: -
DRILLED BY: PONDEROSA DRILLING CO.		START DATE: 5/27/93	COMPLETION DATE: 5/27/93
DRILLING EQUIPMENT: CP-7000 AIR ROTARY HAMMER (7.5" O.D.)		SAMPLING EQUIPMENT: CUTTINGS (CT)	

WELL CONSTRUCTION DATA

*TOTAL DEPTH: 15.5	*WELL DEPTH: 15.5	WELL DIA.(IN): 2	CASING MATERIAL: SCH 40 PVC	WELLHEAD STICK-UP (FT): 2.54
FILTER PACK INTERVAL(FT): 4.0-15.5		SIZE: 10-20 CSSI	WELL SCREEN INTERVAL(FT): 5.5-15.5	
SEAL INTERVAL(FT): 3.0-4.0		TYPE: BENTONITE	SURFACE SEAL INTERVAL(FT): 0.0-3.0	
GROUND SURFACE ELEV. (FT MSL): 98.32		TOP OF CASING ELEV. (FT MSL): 100.86	*FIRST SATURATED ZONE DEPTH (FT): 2'	STATIC W.L. ELEV. (FROM T/C): 4.20

GROUP SYMBOL	DESCRIPTION OF LITHOLOGY	DEPTH (FT)	WELL GRAPHIC	SAMPLE				REMARKS (DRILLING CONDITIONS, PID READINGS, ETC.)
				BLOW COUNT	RECOVERY	TYPE	NUMBER	
	0.0-5.0 SILT: Dark brown	0						Ground surface
ML	5.0-15.5 SILTY/SANDY GRAVEL:	2-4						
GM		6-14						
	TOTAL DEPTH = 15.5 FEET	16						Terminate drilling at 15.5.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

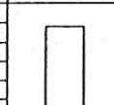
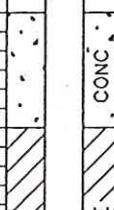
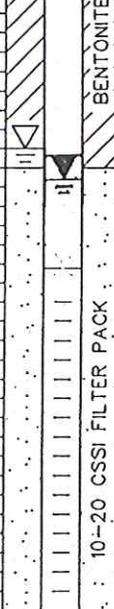
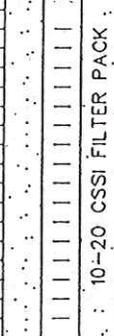
* DEPTHS IN FEET BELOW GROUND SURFACE

Figure E-1

PROJECT: BCC/YAKIMA		 CASCADE EARTH SCIENCES, LTD.	PROJECT NUMBER: 363013	MONITORING WELL NUMBER: MW-2
BORING LOCATION: --			LOGGED BY: LET	CHECKED BY: --
DRILLED BY: PONDEROSA DRILLING CO.			START DATE: 5/26/93	COMPLETION DATE: 5/27/93
DRILLING EQUIPMENT: CP-7000 AIR ROTARY HAMMER (7.5" O.D.)			SAMPLING EQUIPMENT: CUTTINGS (CT)	

WELL CONSTRUCTION DATA

*TOTAL DEPTH: 21.5	*WELL DEPTH: 21.5	WELL DIA.(IN): 2	CASING MATERIAL: SCH 40 PVC	WELLHEAD STICK-UP (FT): 2.42
FILTER PACK INTERVAL(FT): 9.5-21.5		SIZE: 10-20 CSSI	WELL SCREEN INTERVAL(FT): 11.5-21.5	
			SIZE (IN): 0.010	
SEAL INTERVAL(FT): 3.0-9.5		TYPE: BENTONITE	SURFACE SEAL INTERVAL(FT): 0.0-3.0	
			TYPE: CONCRETE	
GROUND SURFACE ELEV. (FT MSL): 103.70	TOP OF CASING ELEV. (FT MSL): 106.12	*FIRST SATURATED ZONE DEPTH (FT): 9.0	STATIC W.L. ELEV. (FROM T/C): 12.12	

GROUP SYMBOL	DESCRIPTION OF LITHOLOGY INTERVAL (FT)	DEPTH (FT)	WELL GRAPHIC	SAMPLE				REMARKS (DRILLING CONDITIONS, PID READINGS, ETC.)
				BLOW COUNT	RECOVERY	TYPE	NUMBER	
	0.0-5.0 WOOD WASTE	0						Ground surface
	5.0-12.0 SILT: Dark gray to brown.	5						
ML	12.0-21.2 SILTY/SANDY GRAVEL:	12						
GM								
	TOTAL DEPTH = 21.5 FEET	22						Terminate drilling at 21.5'

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

* DEPTHS IN FEET BELOW GROUND SURFACE

Figure E-2

PROJECT: BCC/YAKIMA	 CASCADE EARTH SCIENCES, LTD.	PROJECT NUMBER: 363013	MONITORING WELL NUMBER: MW-3
BORING LOCATION: -		LOGGED BY: SMU	CHECKED BY: -
DRILLED BY: BYRD DRILLING CO.		START DATE: 4/27/93	COMPLETION DATE: 4/28/93
DRILLING EQUIPMENT: WEST... HOLLOW STEM AUGER (7.5" O.D.)		SAMPLING EQUIPMENT: CUTTINGS	

WELL CONSTRUCTION DATA

*TOTAL DEPTH: 14.5	*WELL DEPTH: 14.5	WELL DIA.(IN): 2	CASING MATERIAL: SCH 40 PVC	WELLHEAD STICK-UP (FT): 2.42
FILTER PACK INTERVAL(FT): 3.0-14.5		SIZE: 20-40 CSSI	WELL SCREEN INTERVAL(FT): 4.5-14.5	
SEAL INTERVAL(FT): 1.5-3.0		TYPE: BENTONITE	SURFACE SEAL INTERVAL(FT): 0.0-1.5	
GROUND SURFACE ELEV. (FT MSL): 101.38		TOP OF CASING ELEV. (FT MSL): 103.80	*FIRST SATURATED ZONE DEPTH (FT): ~8.0	STATIC W.L. ELEV. (FROM T/C): 10.44

GROUP SYMBOL	INTERVAL (FT)	DESCRIPTION OF LITHOLOGY	DEPTH (FT)	WELL GRAPHIC	SAMPLE				REMARKS (DRILLING CONDITIONS, PID READINGS, ETC.)
					BLOW COUNT	RECOVERY	TYPE	NUMBER	
	0.0-6.0	WOOD WASTE MATERIAL	0						Ground surface
ML	6.0-13.0	SILT: v. dark gray (10 YR 3/1); saturated; v. soft; ~80% silt, to % v. fine sand.	6						
GP	13.0-14.5	GRAVEL: Dark gray; saturated; ~20% fines, 20% sand, 60% fine to coarse gravel.	14						
	TOTAL DEPTH = 14.5 FEET		14						Terminate drilling at 14.5'

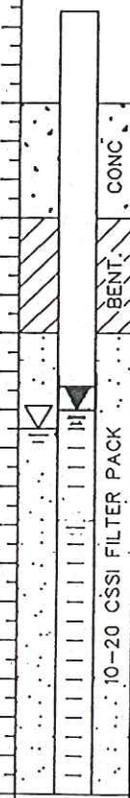
THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

* DEPTHS IN FEET BELOW GROUND SURFACE

Figure E-3

PROJECT: BCC/YAKIMA	 CASCADE EARTH SCIENCES, LTD.	PROJECT NUMBER: 363013	MONITORING WELL NUMBER: MW-4
BORING LOCATION: -		LOGGED BY: -	CHECKED BY: -
DRILLED BY: PONDEROSA DRILLING CO.		START DATE: 5/26/93	COMPLETION DATE: 5/27/93
DRILLING EQUIPMENT: CP-7000 AIR ROTARY HAMMER (7.5" O.D.)		SAMPLING EQUIPMENT: CUTTINGS (CT)	

WELL CONSTRUCTION DATA					
*TOTAL DEPTH: 18.0	*WELL DEPTH: 18.0	WELL DIA.(IN): 2	CASING MATERIAL: SCH 40 PVC	WELLHEAD STICK-UP (FT): 2.38	
FILTER PACK INTERVAL(FT): 6.0-18.0		SIZE: 10-20 CSSI	WELL SCREEN INTERVAL(FT): 8.0-18.0		SIZE (IN): 0.010
SEAL INTERVAL(FT): 30.-6.0		TYPE: BENTONITE	SURFACE SEAL INTERVAL(FT): 0.0-3.0		TYPE: CONCRETE
GROUND SURFACE ELEV. (FT MSL): 102.48	TOP OF CASING ELEV. (FT MSL): 104.86	*FIRST SATURATED ZONE DEPTH (FT): 8.5	STATIC W.L. ELEV. (FROM T/C): 10.89		

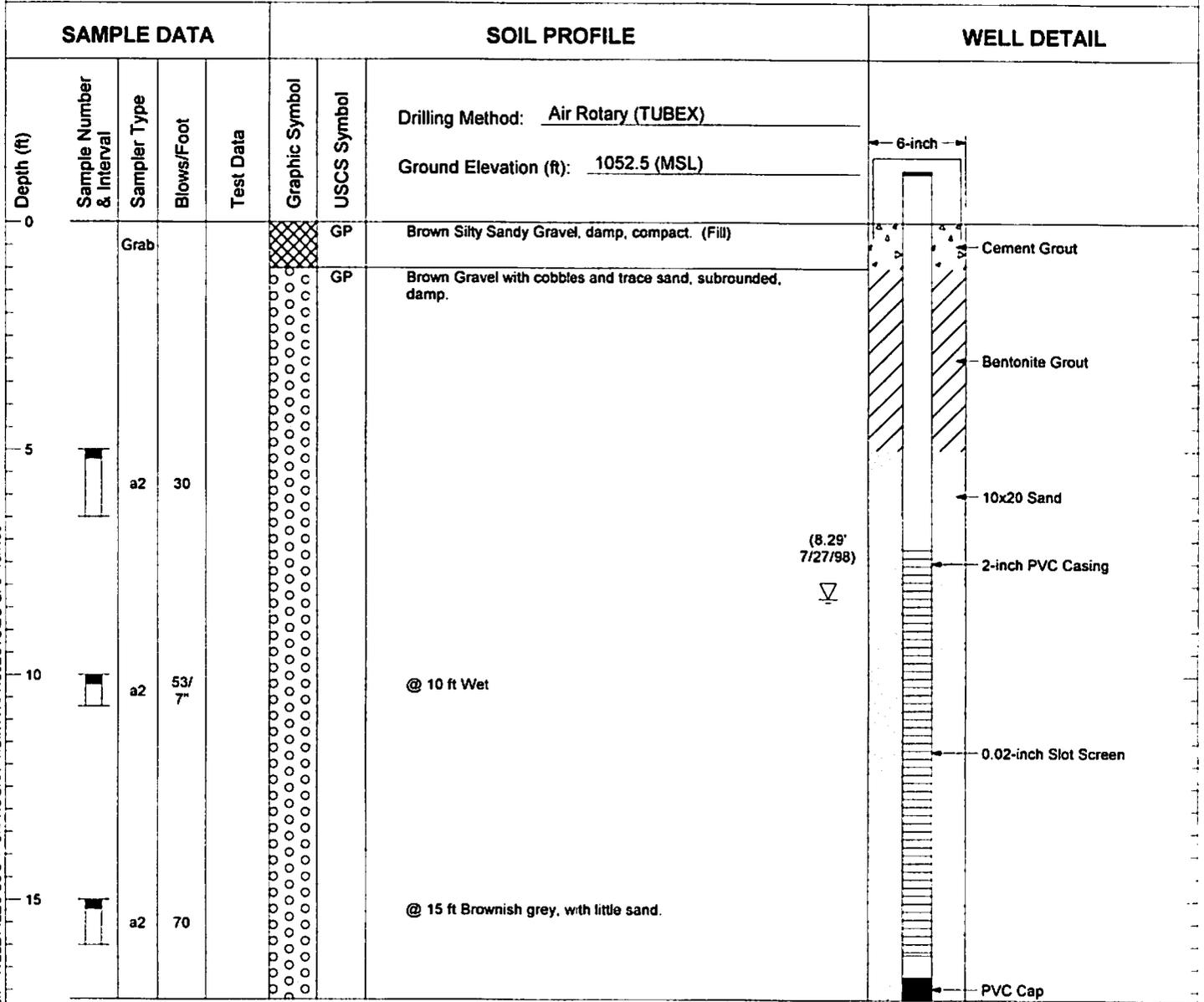
GROUP SYMBOL	DESCRIPTION OF LITHOLOGY	DEPTH (FT)	WELL GRAPHIC	SAMPLE				REMARKS (DRILLING CONDITIONS, PID READINGS, ETC.)
				BLOW COUNT	RECOVERY	TYPE	NUMBER	
	0.0-2.5 SILT (possible fill material)	0						Ground surface
	2.5-9.0 WOOD WASTE	2						
	9.0-18.0 SILTY/SANDY GRAVEL	8						
GM	TOTAL DEPTH = 18.0 FEET	18						Terminate drilling at 18.0'

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

* DEPTHS IN FEET BELOW GROUND SURFACE

Figure E-4

MW-5



Boring Completed 07/27/98
Total Depth = 17.2 ft.

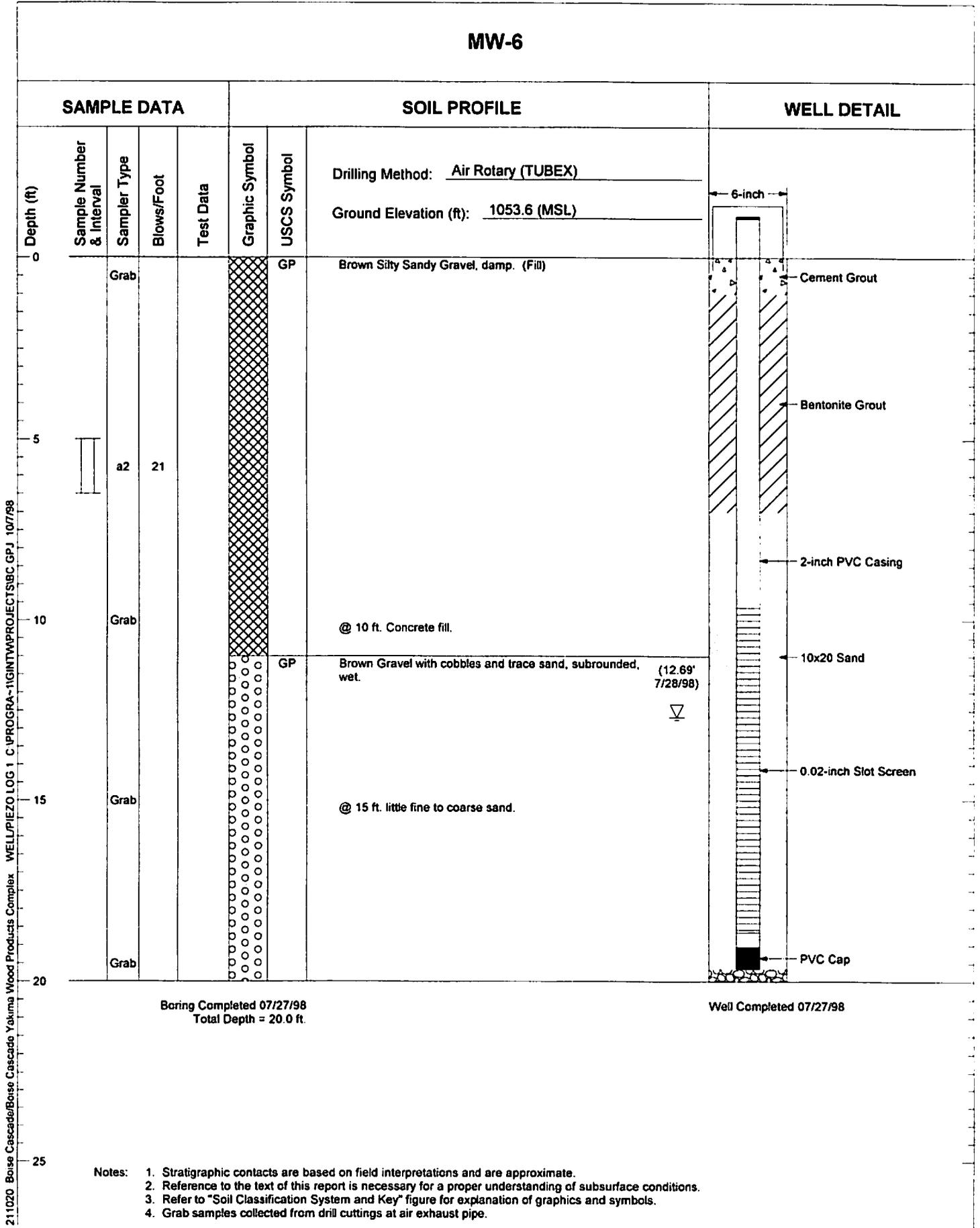
Well Completed 07/27/98

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Grab samples collected from drill cuttings at air exhaust pipe.

211020 Boise Cascade/Boise Cascade Wood Products Complex WELLPIEZO LOG 1 C:\PROGRAMS\1GINTW\PROJECTS\BC GPJ 10/7/98



MW-6



211020 Boise Cascade/Boise Cascade Wood Products Complex WELL/PIEZO LOG 1 C:\PROGRAM-1\GINTW\PROJECTS\BC GPJ 10/7/98

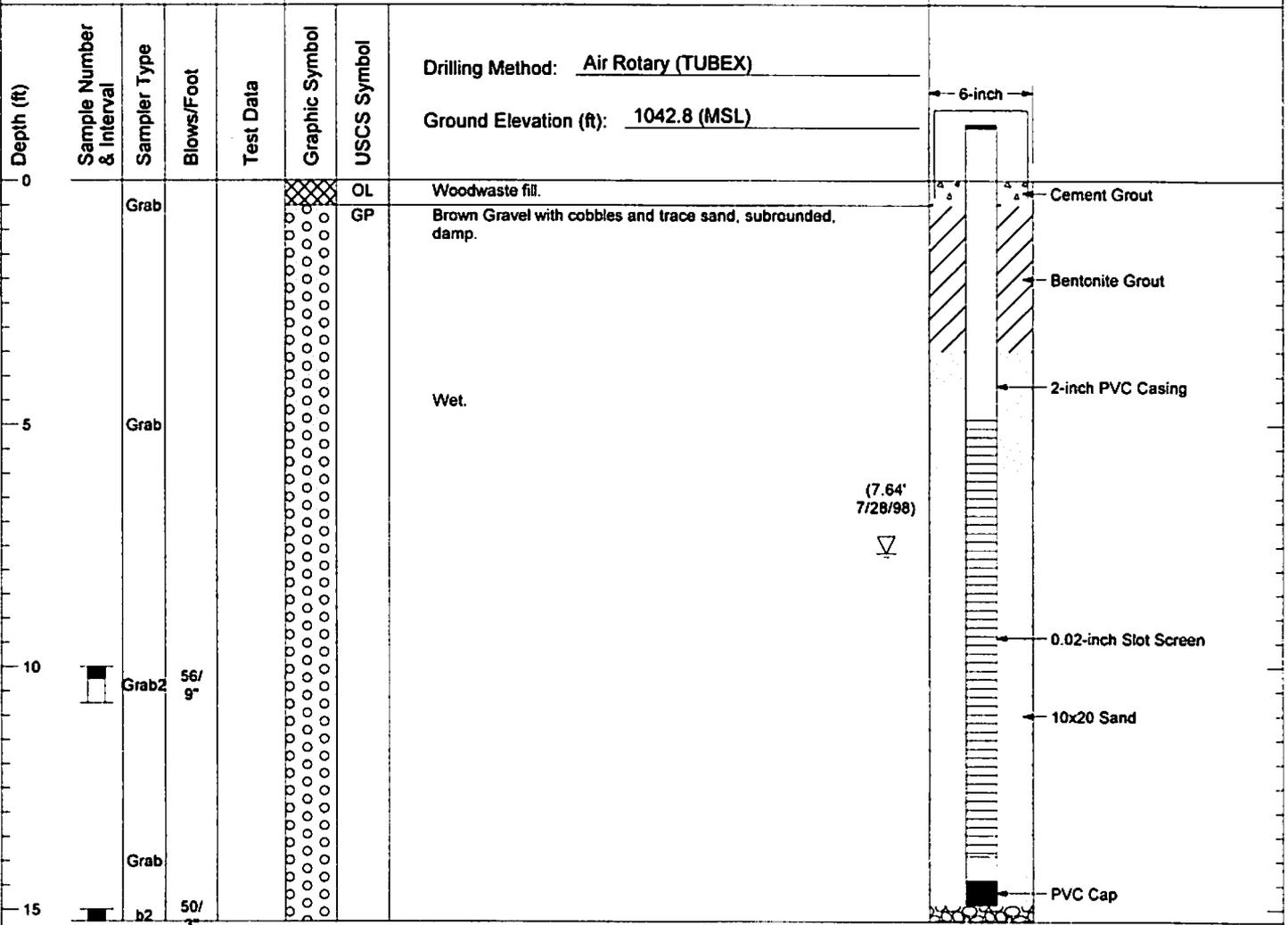


MW-7

SAMPLE DATA

SOIL PROFILE

WELL DETAIL



Boring Completed 07/27/98
Total Depth = 15.3 ft.

Well Completed 07/27/98

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Grab samples collected from drill cuttings at air exhaust pipe.

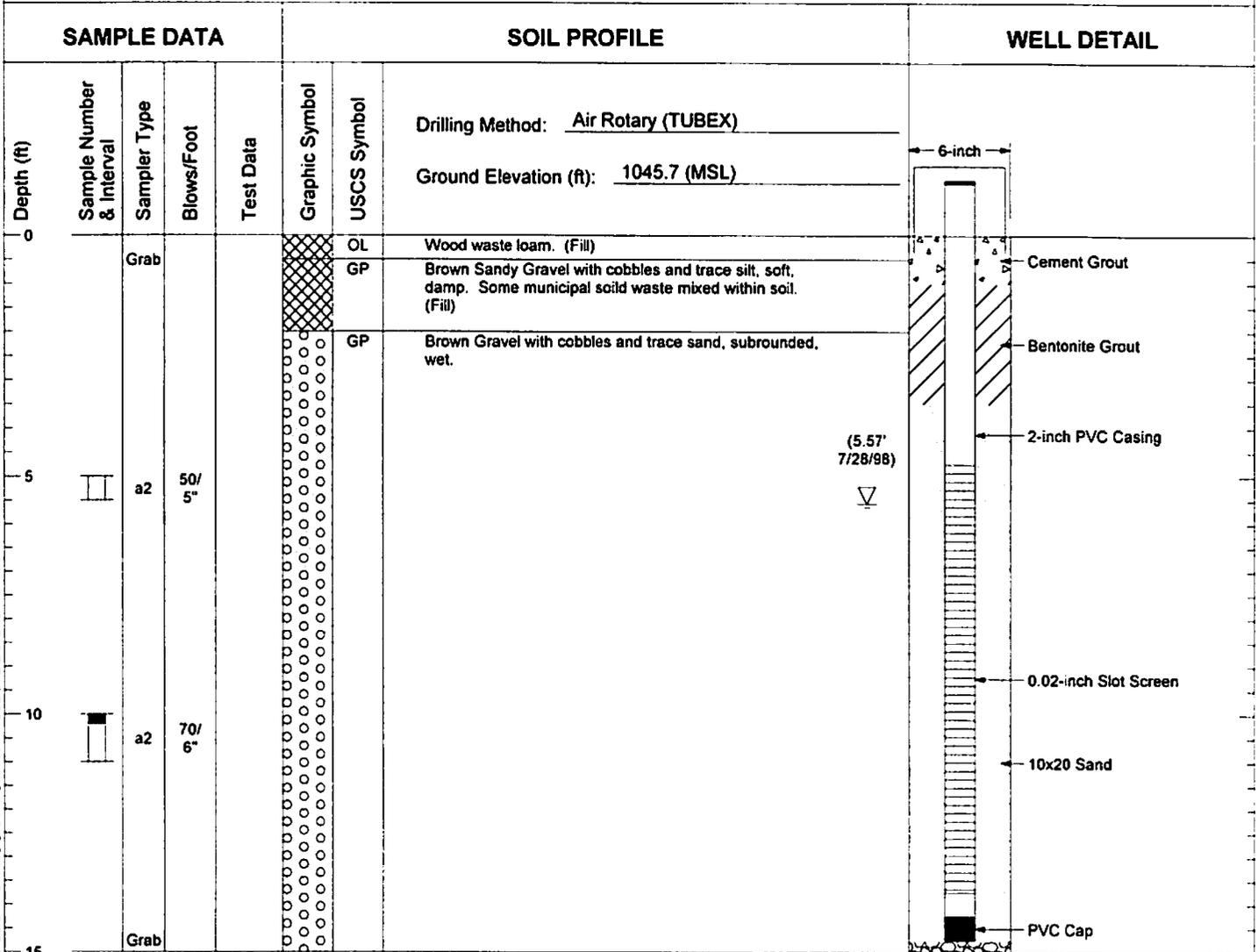
211020 Boise Cascade/Boise Cascade Yakima Wood Products Complex WELLPIEZO LOG 1 C:\PROGRAMS\1GINTWPROJ\PROJECTS\IBC.GPJ 10/7/98



Log of Boring MW-7

Figure E-7

MW-8



Boring Completed 07/28/98
Total Depth = 15.0 ft.

Well Completed 07/28/98

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Grab samples collected from drill cuttings at air exhaust pipe.

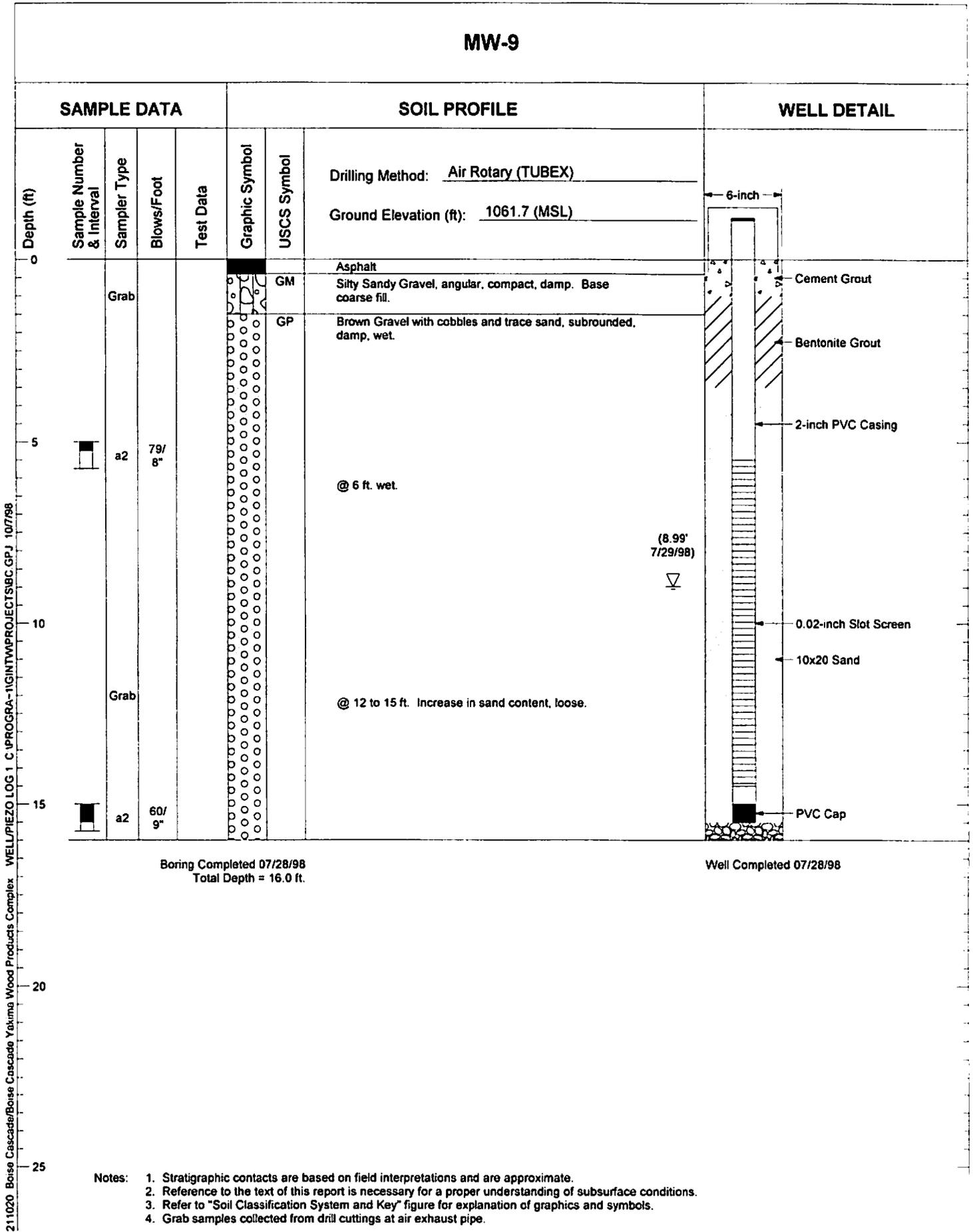
211020 Boise Cascade/Boise Cascade Yakima Wood Products Complex WELL/PIEZO LOG 1 C:\PROGRAMS\1GINTW\PROJECTS\IBC.GPJ 10/7/98



Log of Boring MW-8

Figure E-8

MW-9



211020 Boise Cascade/Boise Cascade Yakima Wood Products Complex WELL/PIEZO LOG 1 C:\PROGRAMS\1GINTW\PROJECTS\BC.GPJ 10/7/98

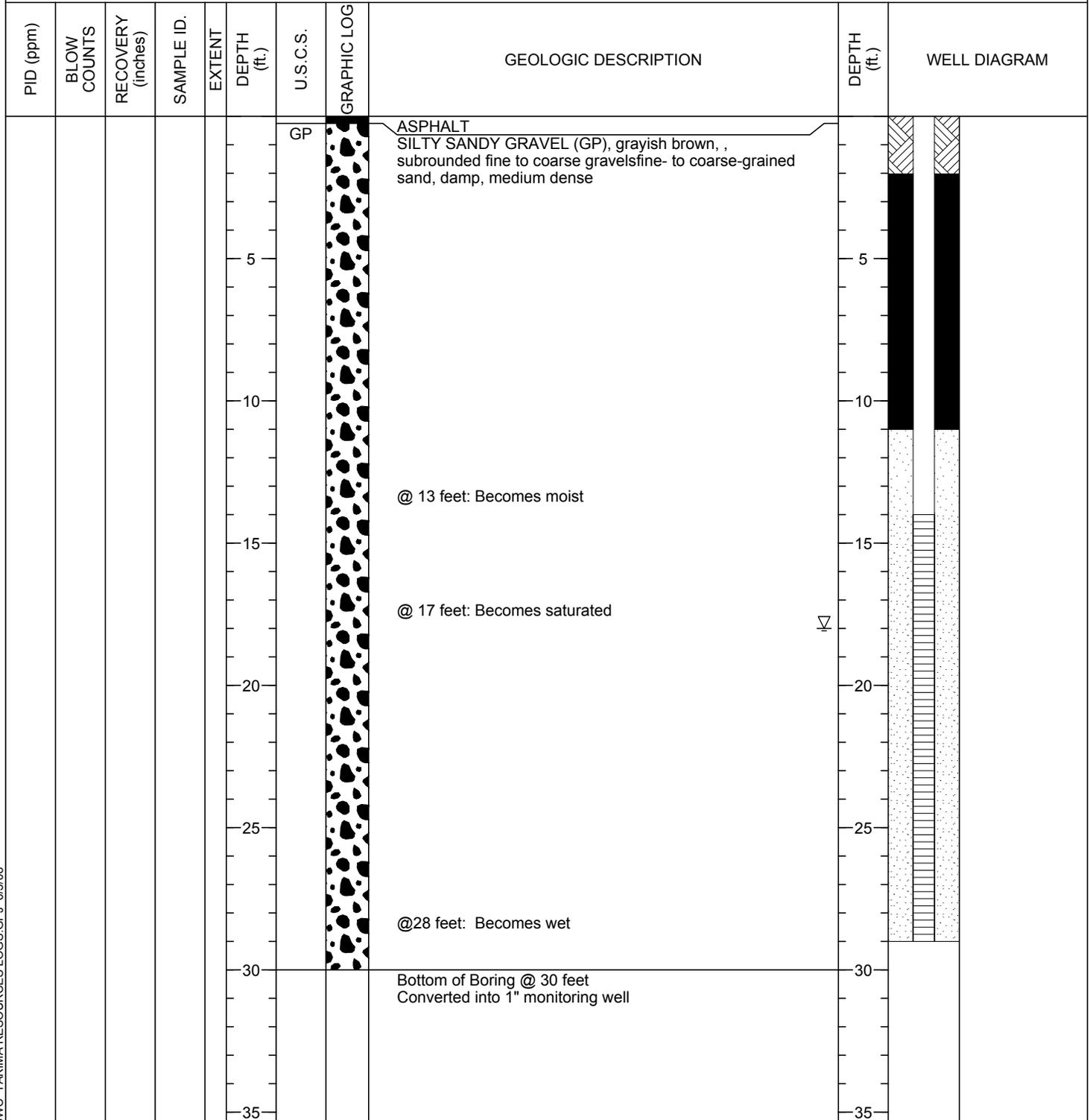


Log of Boring MW-9

Figure E-9

BORING/WELL CONSTRUCTION LOG

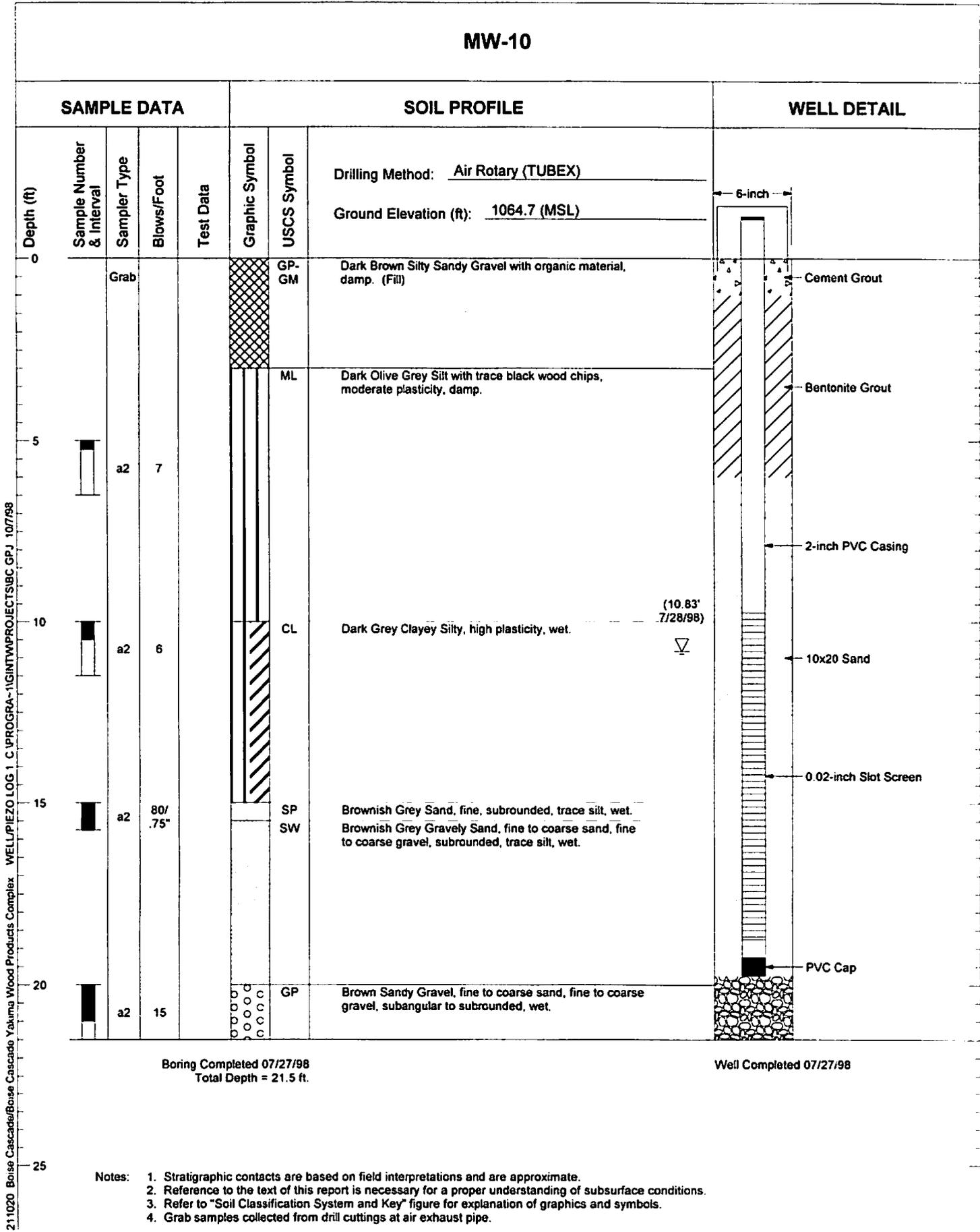
PROJECT NUMBER	555-5753-001	BORING/WELL NUMBER	MW-9A
PROJECT NAME	Former Boise Cascade Mill Site	DATE COMPLETED	March 4, 2008
LOCATION	Yakima, WA	TOTAL DEPTH OF BORING	30.0
COORDINATES		INITIAL WATER LEVEL	▽ 18.0
DRILLING METHOD	Sonic	STATIC WATER LEVEL	▼
SAMPLING METHOD		LOGGED BY	Deutsch/Saul
GROUND ELEVATION		TOP OF CASING ELEVATION	



BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08

Figure E-10

MW-10



Boring Completed 07/27/98
Total Depth = 21.5 ft.

Well Completed 07/27/98

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Grab samples collected from drill cuttings at air exhaust pipe.

211020 Boise Cascade/Boise Cascade Yakima Wood Products Complex WELL/PIEZO LOG 1 C.I.PROGRA-1GINTWPROJECTSIBC.GPJ 10/7/98



Log of Boring MW-10

Figure E-11



22122 20th Avenue SE
Bothell, Washington 98021
Telephone: 425.402.8800
SLR International Corp Fax: 425.402.8488

WELL NUMBER MW-11

CLIENT <u>City of Yakima</u>	PROJECT NAME <u>Former City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>2/16/09</u> COMPLETED <u>2/16/09</u>	GROUND ELEVATION <u>1063.19 ft</u> HOLE SIZE <u>8.5" Diameter</u>
DRILLING CONTRACTOR <u>Cascade Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	∇ AT TIME OF DRILLING <u>15.5 ft / Elev 1047.7 ft</u>
LOGGED BY <u>C. Lee</u> CHECKED BY _____	AT END OF _____
NOTES _____	AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0								WOOD WASTE medium dense.	
2.5		D&M	MW11-S1	100	29				Concrete
5.0		D&M	MW11-S2	100	50/4"			@ 4.5 feet: Some gray silt, few fine gravel.	Hydrated bentonite chips
7.5		D&M		0	24				2"-diameter Sch. 40 PVC blank riser
10.0		D&M		0	43				16x30 Colorado silica sand pack
12.5		D&M	MW11-S3	30	25			@ 12.0 feet: Driller comment - drilled through a log. @ 12.5 feet: Some gray fine-grained sand.	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
* = Soil sample submitted for chemical or geotechnical analysis.

∇ Water level at time of drilling.

(Continued Next Page)

Figure E-12 (Page 1 of 2)

SLR MW LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09



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WELL NUMBER MW-11

PAGE 2 OF 2

CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	X							WOOD WASTE medium dense. (continued)	
15.0		D&M	MW11-S4	100	50/4"			GRAVELLY SAND, gray, fine- to medium-grained, some fine to medium gravel, some fractured cobbles up to 3"-diameter, very dense, moist to wet.	
17.5	X	D&M	MW11-S5	100	50/5"	SP			
20.0	X	D&M			66			@ 19.0 feet: Sand becomes fine-grained.	
									2"-diameter Sch. 40 PVC 0.020"-slotted screen
									End cap

Boring completed at 22.0 feet.

WELL COMPLETION DETAILS:

- +2.8 to 0 feet: 2"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
- 0 to 6 feet: 2"-diameter Sch. 40 PVC blank riser.
- 6 to 20.8 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 20.8 to 21.1 feet: 2"-diameter Sch. 40 PVC end cap.
- 0 to 2 feet: Concrete.
- 2 to 4 feet: Hydrated bentonite chips.
- 4 to 22 feet: 16x30 Colorado silica sand.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
* = Soil sample submitted for chemical or geotechnical analysis.

∇ Water level at time of drilling.

SLR MW LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09

Figure E-12 (Page 2 of 2)



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WELL NUMBER MW-12

PAGE 1 OF 2

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/16/09 COMPLETED 2/16/09 GROUND ELEVATION 1065.73 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 12.5 ft / Elev 1053.2 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0									
2.5									
	X	D&M	MW12-S1	60	13				Concrete
5.0									Hydrated bentonite chips
	X	D&M	MW12-S2	100	50/6"			@ 4.5 feet: Becomes gravelly, medium to coarse, few cobbles, little silt, very dense.	2"-diameter Sch. 40 PVC blank riser
7.5									
	X	D&M	MW12-S3	100	50/5"	SP			
10.0									
	X	D&M	MW12-S4	66	57				16x30 Colorado silica sand pack
12.5									
	X	D&M		0	26			∇ @ 12.5 feet: Becomes wet.	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
 * = Soil sample submitted for chemical or geotechnical analysis.

∇ Water level at time of drilling.

(Continued Next Page)

Figure E-13 (Page 1 of 2)

SLR MW LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09



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WELL NUMBER MW-12

CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
15.0						SP		SAND, brownish gray, fine-grained, loose to very dense, moist to wet. (continued) @ 14.0 feet: Becomes gray, fine-grained with no gravel, medium dense wet.	
16.0		D&M MW12-S5*	80	16			1049.7		
17.5						GP	SANDY GRAVEL brown, fine to coarse, rounded, some fine- to medium-grained sand, some cobbles, few fines, medium dense, wet. @ 17.0 feet: Gravel becomes fine.		
20.0		D&M MW12-S6	50	38					
22.0		D&M MW12-S7	66	35			1043.7		

Boring completed at 22.0 feet.

WELL COMPLETION DETAILS:

+2.8 to 0 feet: 2"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
0 to 6.2 feet: 2"-diameter Sch. 40 PVC blank riser.
6.2 to 21 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
21 to 21.2 feet: 2"-diameter Sch. 40 PVC end cap.

0 to 2 feet: Concrete.
2 to 4 feet: Hydrated bentonite chips.
4 to 22 feet: 16x30 Colorado silica sand.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
* = Soil sample submitted for chemical or geotechnical analysis.

∇ Water level at time of drilling.

SLR MW LOG YAKIMA SOIL BORINGS GP.J GINT US.GDT 3/20/09

Figure E-13 (Page 2 of 2)



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WELL NUMBER MW-13

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/17/09 COMPLETED 2/17/09 GROUND ELEVATION 1063.56 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 7.5 ft / Elev 1056.1 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0									
2.5		D&M	MW13-S1	33	26		SP	<p>SAND, brown, fine-grained, little fine to coarse gravel, medium dense, damp to wet.</p> <p>@ 4.0 feet: Gravel becomes predominantly fine, few cobbles up to 3"-diameter, becomes moist.</p> <p>∇ @ 7.0 feet: Cobbles increase to some, becomes wet.</p> <p>@ 9.5 feet: Gravel increases to some and becomes medium to coarse, trace silt, wet.</p>	<p>Concrete</p> <p>Hydrated bentonite chips</p> <p>2"-diameter Sch. 40 PVC blank riser</p> <p>16x30 Colorado silica sand pack</p>
5.0		D&M	MW13-S2		18				
7.5		D&M	MW13-S3	30	14				
10.0		D&M	MW13-S4	50	13				
12.5		D&M	MW13-S5	80	14				
							13.5	1050.1	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
 * = Soil sample submitted for chemical or geotechnical analysis.

∇ Water level at time of drilling.

(Continued Next Page)

Figure E-14 (Page 1 of 2)

SLR MW LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/13/09



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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM	
						CL		ORGANIC SOIL, dark brown, high-plasticity, stiff, wet, little wood bark.		
15.0							14.5	1049.1		
		D&M	MW13-S6*	100	8	SP-SM		SILTY SAND, brownish gray, fine-grained, little silt, loose to medium dense, wet, little to some wood bark.		
17.5								@ 17.0 feet: Becomes dark brown, some silt, little fine to coarse gravel, medium dense, wet, trace wood bark.		
		D&M	MW13-S7*	80	35			19.5		1044.1
20.0						SP		SAND, brown, fine- to medium-grained, some gravel, some cobbles, dense, wet.		
		D&M	MW13-S8	66	51				21.5	1042.1

Boring complete at 21.5 feet.

WELL COMPLETION DETAILS:

- +2.6 to 0 feet: 2"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
- 0 to 6.2 feet: 2"-diameter Sch. 40 PVC blank riser.
- 6.2 to 21 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 21 to 21.3 feet: 2"-diameter Sch. 40 PVC end cap.
- 0 to 2 feet: Concrete.
- 2 to 4 feet: Hydrated bentonite chips.
- 4 to 21.5 feet: 16x30 Colorado silica sand.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
* = Soil sample submitted for chemical or geotechnical analysis.

∇ Water level at time of drilling.

SLR MW LOG YAKIMA SOIL BORINGS GP.J GINT US.GDT 4/13/09

Figure E-14 (Page 2 of 2)



22122 20th Avenue SE
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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00006 PROJECT LOCATION Yakima, Washington
 DATE STARTED 11/4/09 COMPLETED 11/4/09 GROUND ELEVATION 1041.25 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 10.0 ft / Elev 1031.3 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0									
2.5	D&M			100	50/2"	GP		GRAVEL, gray, medium- to coarse-grained, some cobbles, trace fine-grained sand, very dense, dry to damp.	
5.0	D&M		0	50/4"	@ 5.0 feet: No recovery.				
7.5	D&M		100	50/1"					
10.0	D&M			100	50/3"	GP		SANDY GRAVEL, grayish brown, fine- to coarse-grained, some cobbles, little fine- to coarse-grained sand, trace fines, very dense, damp to wet.	
12.5									

REMARKS
 D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR MW LOG YAKIMA SOIL BORINGS GPJ GINT US GDT 12/9/09

(Continued Next Page)

Figure E-15 (Page 1 of 2)



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
PROJECT NUMBER 001.0221.00006 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
12.5	X	D&M		100	50/6"	GP		SANDY GRAVEL , grayish brown, fine- to coarse-grained, some cobbles, little fine- to coarse-grained sand, trace fines, very dense, damp to wet. <i>(continued)</i>	
15.0	X	D&M	100	50/6"					
17.5	X	D&M	100	50/6"					
18.0									

Boring completed at 18.0 feet.

WELL COMPLETION DETAILS:

- 0 to 3.1 feet: 2"-diameter Sch. 40 PVC blank riser.
- 3.1 to 17.7 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 17.7 to 18 feet: 2"-diameter Sch. 40 PVC end cap.

- 0 to 1 feet: Concrete.
- 1 to 2 feet: Hydrated bentonite chips.
- 2 to 18 feet: 2x12 Colorado silica sand.

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR MW LOG YAKIMA SOIL BORINGS GPJ GINT US GDT 12/9/09

Figure E-15 (Page 2 of 2)



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00006 PROJECT LOCATION Yakima, Washington
 DATE STARTED 11/4/09 COMPLETED 11/4/09 GROUND ELEVATION 1050.78 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 14.0 ft / Elev 1036.8 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0									
							█	BARK CHIPS.	█
							█	SAND , light brown, fine-grained, few fine gravel, loose to medium dense, dry.	█
2.5		D&M		20	13	SP	█		█
5.0		D&M		5	17		█		█
7.5		D&M		70	27	SM	█	SILTY SAND , reddish brown, fine-grained, little gray silt, medium dense, damp, mottled.	█
10.0		D&M		10	41	SP	█	GRAVELLY SAND , reddish brown, fine-grained, some fine to coarse gravel, medium dense to very dense, damp.	█
12.5									

REMARKS
 D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
 ∇ Water level at time of drilling.

SLR MW LOG YAKIMA SOIL BORINGS GPJ GINT US GDT 12/9/09

(Continued Next Page)

Figure E-16 (Page 1 of 2)



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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00006

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
12.5									
	X	D&M		90	50/5"	SP		GRAVELLY SAND , reddish brown, fine-grained, some fine to coarse gravel, medium dense to very dense, damp. <i>(continued)</i>	<p>2"-diameter Sch. 40 PVC 0.020"-slotted screen</p> <p>End cap</p>
								14.0 ▽ 1036.8	
15.0									
	X	D&M		50	50/4"	GW		GRAVEL , gray, fine- to coarse-grained, few coarse-grained sand, trace fines, wet, landfill odor.	
								16.5 1034.3	
17.5									
	X	D&M		100	50/5"	SW		GRAVELLY SAND , gray, fine- to coarse-grained, some fine to coarse gravel, trace fines, very dense, wet, landfill odor.	
20.0									
	X	D&M		100	50/4"				
									20.4 1030.4

Boring completed at 20.4 feet.

WELL COMPLETION DETAILS:

- 0 to 5.1 feet: 2"-diameter Sch. 40 PVC blank riser.
- 5.1 to 19.7 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 19.7 to 20 feet: 2"-diameter Sch. 40 PVC end cap.
- 0 to 1.5 feet: Concrete.
- 1.5 to 3.5 feet: Hydrated bentonite chips.
- 3.5 to 20.4 feet: 2x12 Colorado silica sand.

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

▽ Water level at time of drilling.

SLR.MW/LOG_YAKIMA SOIL BORINGS.GPJ GINT US.GDT 12/9/09

Figure E-16 (Page 2 of 2)



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WELL NUMBER MW-16

CLIENT City of Yakima **PROJECT NAME** Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00006 **PROJECT LOCATION** Yakima, Washington

DATE STARTED 11/3/09 **COMPLETED** 11/3/09 **GROUND ELEVATION** 1047.17 ft **HOLE SIZE** 8.5" Diameter

DRILLING CONTRACTOR Cascade Drilling **GROUND WATER LEVELS:**

DRILLING METHOD Hollow Stem Auger **AT TIME OF DRILLING** 7.0 ft / Elev 1040.2 ft

LOGGED BY C. Lee **CHECKED BY** _____ **AT END OF** ---

NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0									
0.5							ASPHALT.	1046.7	
1.5						GP	SANDY GRAVEL, brown, medium- to coarse-grained, some fine- to coarse-grained sand, damp.	1045.7	Concrete
2.5	D&M			100	50/6"	GP	GRAVEL, brown, medium- to coarse-grained, some cobbles, few fine- to coarse-grained sand, very dense, damp.		Hydrated bentonite chips
4.0						GP	SANDY GRAVEL, brown, fine- to medium-grained, little fine- to medium-grained sand, very dense, damp.	1043.2	2"-diameter Sch. 40 PVC blank riser
5.0	D&M			100	50/5"	GP			
6.5						GP	GRAVEL, gray, coarse-grained, some cobbles, very dense, damp to wet. @ 7.0 feet: Becomes wet. @ 7.5 feet: No recovery.	1040.7	2x12 Colorado silica sand pack
7.5	D&M			0	50/6"	GP			
9.0						SP	SAND, brown, fine- to medium-grained, few medium gravel, very dense, wet.	1038.2	2"-diameter Sch. 40 PVC 0.020"-slotted screen
10.0	D&M			100	50/6"	SP			
11.5						SP	GRAVELLY SAND, brown, medium- to coarse-grained, some fine to medium gravel, trace fines, very dense, wet.	1035.7	
12.5									

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR MW LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 11/19/09

(Continued Next Page)

Figure E-17 (Page 1 of 2)



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
PROJECT NUMBER 001.0221.00006 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
12.5									
	X	D&M		100	50/6"	SP		GRAVELLY SAND , brown, medium- to coarse-grained, some fine to medium gravel, trace fines, very dense, wet. <i>(continued)</i>	
									End cap

Boring completed at 14.0 feet.

WELL COMPLETION DETAILS:

0 to 3.9 feet: 2"-diameter Sch. 40 PVC blank riser.
3.9 to 13.7 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
13.7 to 14 feet: 2"-diameter Sch. 40 PVC end cap.

0 to 1.5 feet: Concrete.
1.5 to 3 feet: Hydrated bentonite chips.
3 to 14 feet: 2x12 Colorado silica sand.

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR MW LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 11/19/09

Figure E-17 (Page 2 of 2)



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CLIENT City of Yakima **PROJECT NAME** Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00006 **PROJECT LOCATION** Yakima, Washington

DATE STARTED 11/3/09 **COMPLETED** 11/3/09 **GROUND ELEVATION** 1044.36 ft **HOLE SIZE** 8.5" Diameter

DRILLING CONTRACTOR Cascade Drilling **GROUND WATER LEVELS:**

DRILLING METHOD Hollow Stem Auger **AT TIME OF DRILLING** 7.0 ft / Elev 1037.4 ft

LOGGED BY C. Lee **CHECKED BY** _____ **AT END OF** ---

NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0									
1.0						GP		SANDY GRAVEL, brown, medium- to coarse-grained, little fine- to medium-grained sand, damp.	Concrete
2.5						SP		GRAVELLY SAND, brown, fine- to medium-grained, little fine to medium gravel, few fines, dense, damp to moist.	Hydrated bentonite chips
4.5				30	32				2"-diameter Sch. 40 PVC blank riser
5.0						GP		SANDY GRAVEL, brown, fine- to coarse-grained, some fine-grained sand, dense, moist.	
7.5				50	50/5"				2x12 Colorado silica sand pack
9.5						SP		GRAVEL, gray, medium- to coarse-grained, some cobbles, trace fines, very dense, wet.	
10.0								@ 9.0 feet: Auger refusal. Moved boring three feet west and resumed drilling.	2"-diameter Sch. 40 PVC 0.020"-slotted screen
11.5				50	50/6"	SP		SAND, gray, medium- to coarse-grained, few fine gravel, very dense, wet.	
12.5						GP		SANDY GRAVEL, gray, fine- to medium-grained, little fine- to coarse-grained sand, trace fines, wet.	

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

▽ Water level at time of drilling.

(Continued Next Page)

Figure E-18 (Page 1 of 2)

SLR MW LOG YAKIMA SOIL BORINGS GP J GINT US GDT 11/19/09



22122 20th Avenue SE
 Bothell, Washington 98021
 Telephone: 425.402.8800
 SLR International Corp Fax: 425.402.8488

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00006 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
12.5		D&M		50	50/5"	GP		SANDY GRAVEL , gray, fine- to medium-grained, little fine- to coarse-grained sand, trace fines, wet. (continued)	
									1030.4 ← End cap

Boring completed @ 14.0 feet.

WELL COMPLETION DETAILS:

0 to 3.9 feet: 2"-diameter Sch. 40 PVC blank riser.
 3.9 to 13.7 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
 13.7 to 14 feet: 2"-diameter Sch. 40 PVC end cap.

0 to 1.5 feet: Concrete.
 1.5 to 3 feet: Hydrated bentonite chips.
 3 to 14 feet: 2x12 Colorado silica sand.

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR MW LOG YAKIMA SOIL BORINGS GPJ GINT US.GDT 11/19/09

Figure E-18 (Page 2 of 2)



22122 20th Avenue SE
 Bothell, Washington 98021
 Telephone: 425.402.8800
 SLR International Corp Fax: 425.402.8488

CLIENT City of Yakima **PROJECT NAME** Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00006 **PROJECT LOCATION** Yakima, Washington

DATE STARTED 11/2/09 **COMPLETED** 11/2/09 **GROUND ELEVATION** 1060.94 ft **HOLE SIZE** 8.5" Diameter

DRILLING CONTRACTOR Cascade Drilling **GROUND WATER LEVELS:**

DRILLING METHOD Hollow Stem Auger **AT TIME OF DRILLING** 12.0 ft / Elev 1048.9 ft

LOGGED BY C. Lee **CHECKED BY** _____ **AT END OF** ---

NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0									
1.5						WW		WOOD WASTE, large bark chips, sawdust, damp.	Concrete
2.5		D&M		30	29	SP		SAND, dark brown, fine-grained, trace fine to medium gravel, medium dense, damp.	Hydrated bentonite chips
4.5						WW		WOOD WASTE, small bark chips, sawdust, dense, damp.	2"-diameter Sch. 40 PVC blank riser
5.0		D&M		100	31				
7.5		D&M		30	35			@ 7.0 feet: Becomes moist.	
9.5						SP		@ 8.5 feet: Some gray silt.	2x12 Colorado silica sand pack
10.0		D&M		100	38			SAND, gray, very fine-grained, medium dense, few silt, moist.	
12.0						ML		SILT, gray, little very fine-grained sand, medium stiff, wet, rotten egg odor.	

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

▽ Water level at time of drilling.

SLR MW LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 11/19/09

(Continued Next Page)

Figure E-19 (Page 1 of 2)



22122 20th Avenue SE
Bothell, Washington 98021
Telephone: 425.402.8800
SLR International Corp Fax: 425.402.8488

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
PROJECT NUMBER 001.0221.00006 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
12.5									
		D&M		100	5	ML		SILT, gray, little very fine-grained sand, medium stiff, wet, rotten egg odor. (continued)	<p>2"-diameter Sch. 40 PVC 0.020"-slotted screen</p> <p>End cap</p>
15.0		D&M		100	3	SM		SILTY SAND, gray, fine-grained, some fines, very loose, wet, rotten egg odor.	
17.5		D&M		0	4		@ 17.5 feet: No recovery.		
20.0		D&M		70	7	GP		GRAVEL, gray, medium-grained, trace fines, loose, wet.	
21.5									

Boring completed at 21.5 feet.

WELL COMPLETION DETAILS:

- +2.9 to 6.6 feet: 2"-diameter Sch. 40 PVC blank riser.
- 6.6 to 21.2 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 21.2 to 21.5 feet: 2"-diameter Sch. 40 PVC end cap.
- 0 to 2 feet: Concrete.
- 2 to 4 feet: Hydrated bentonite chips.
- 4 to 21.5 feet: 2x12 Colorado silica sand.

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

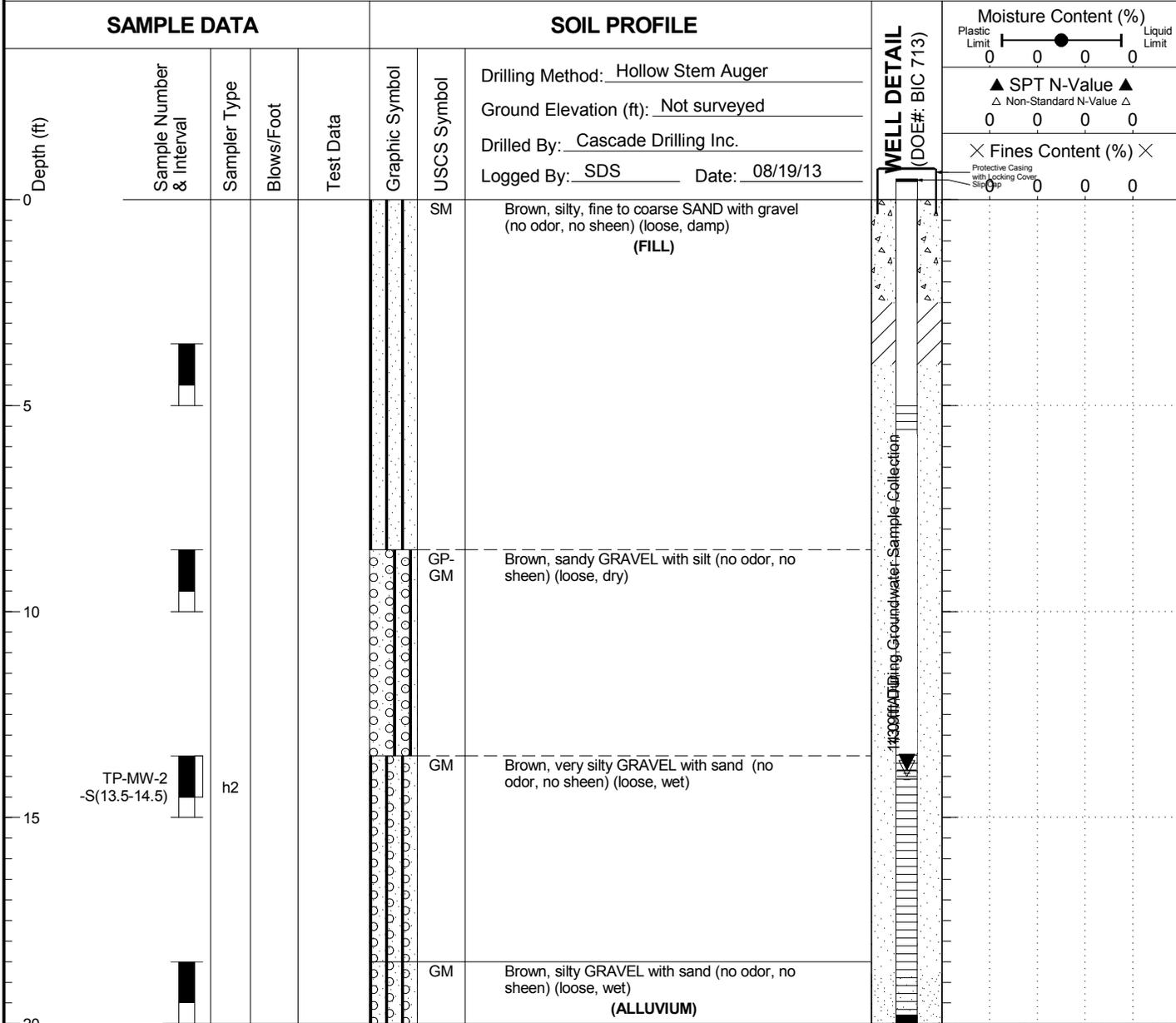
∇ Water level at time of drilling.

SLR MW LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 11/19/09

Figure E-19 (Page 2 of 2)

TP-MW-1

LAI Project No: 1148007.010



Boring Completed 08/19/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466940.90
East: 1640847.49

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



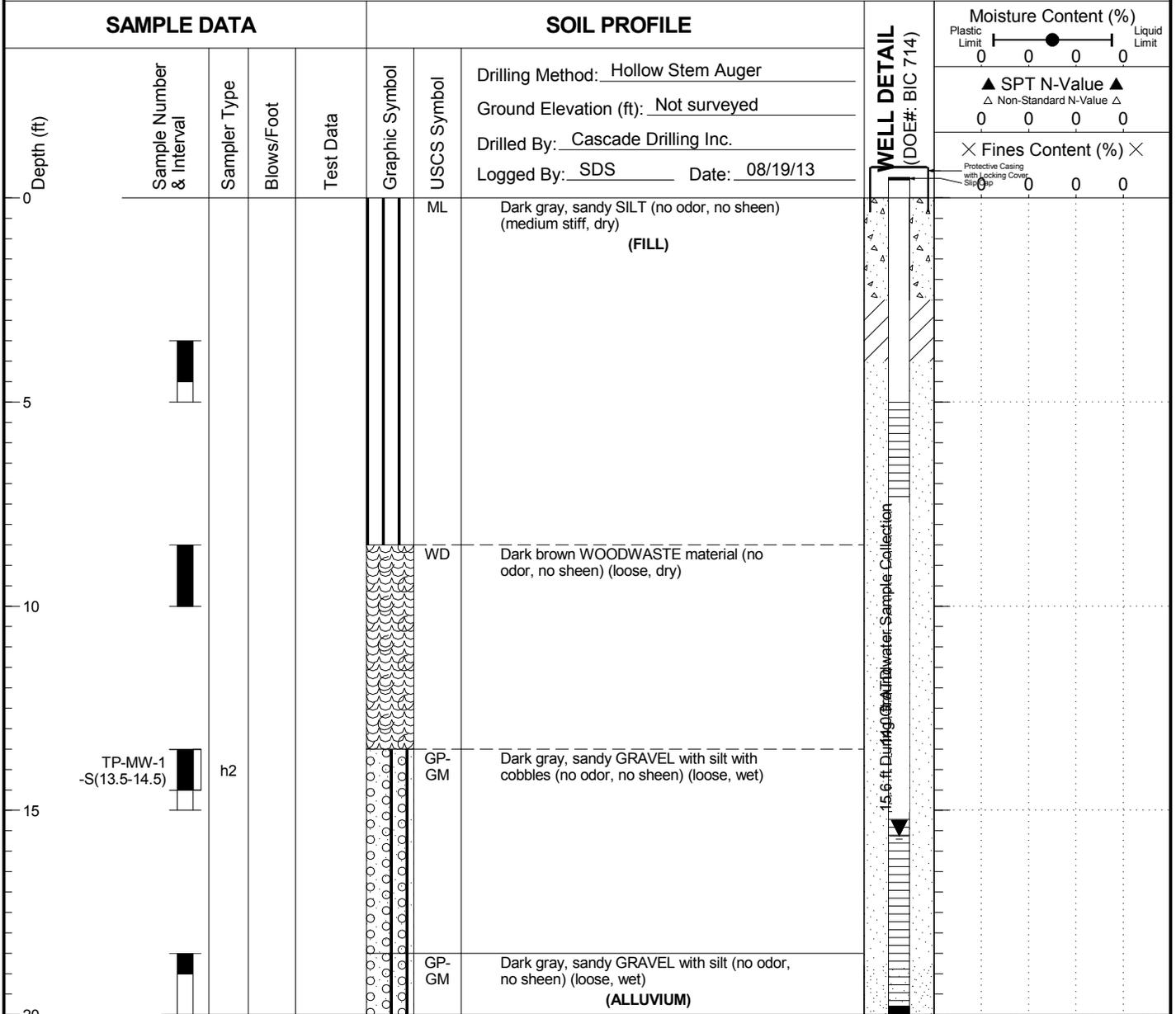
Yakima Mill Site
Yakima, WA

Log of Boring TP-MW-1E

Figure
E-20

TP-MW-2

LAI Project No: 1148007.010



Boring Completed 08/19/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 467023.93
East: 1641162.31

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



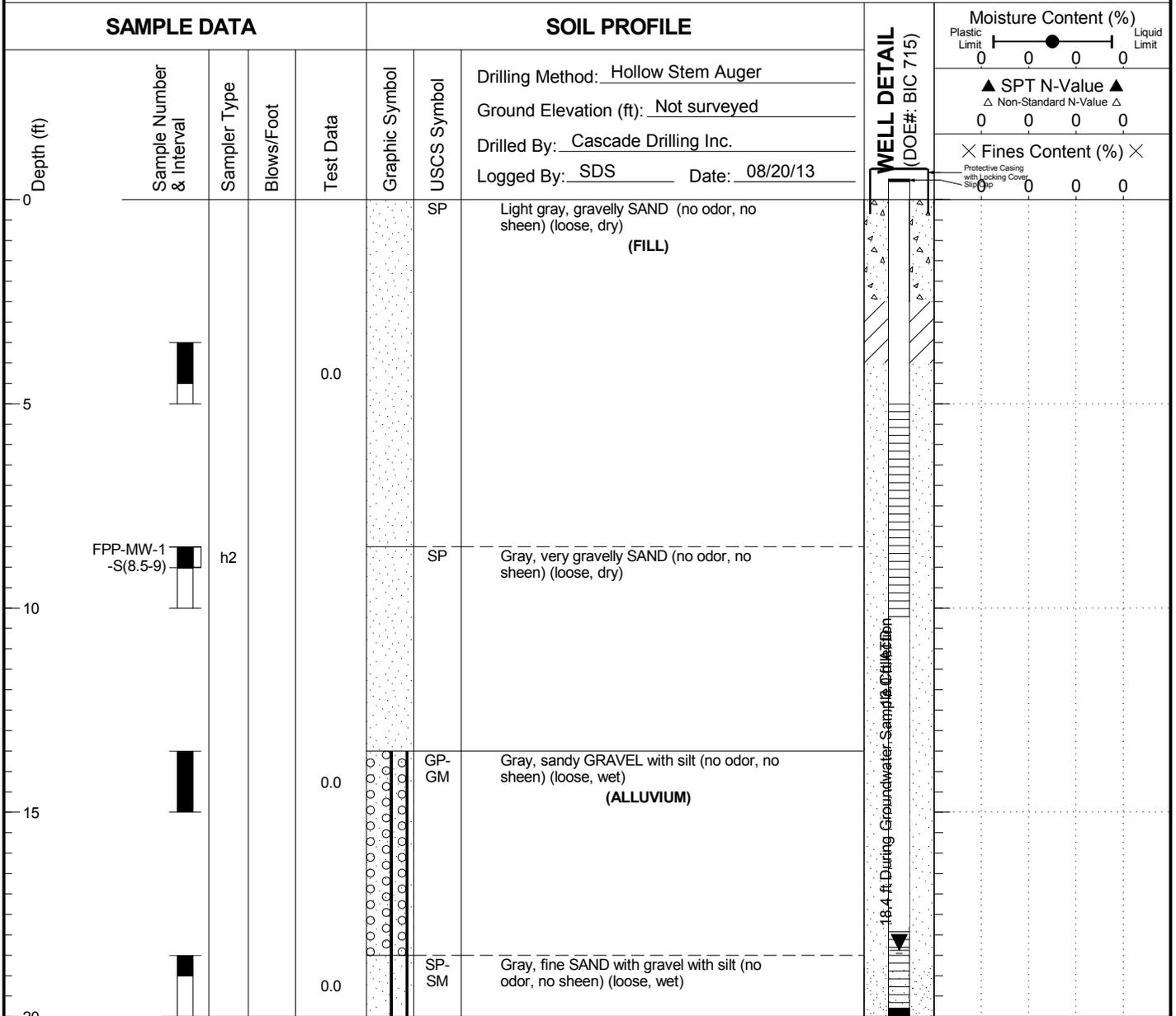
Yakima Mill Site
Yakima, WA

Log of Boring TP-MW-2

Figure
E-21

FPP-MW-1

LAI Project No: 1148007.010



Boring Completed 08/20/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466850.92
East: 1641121.25

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



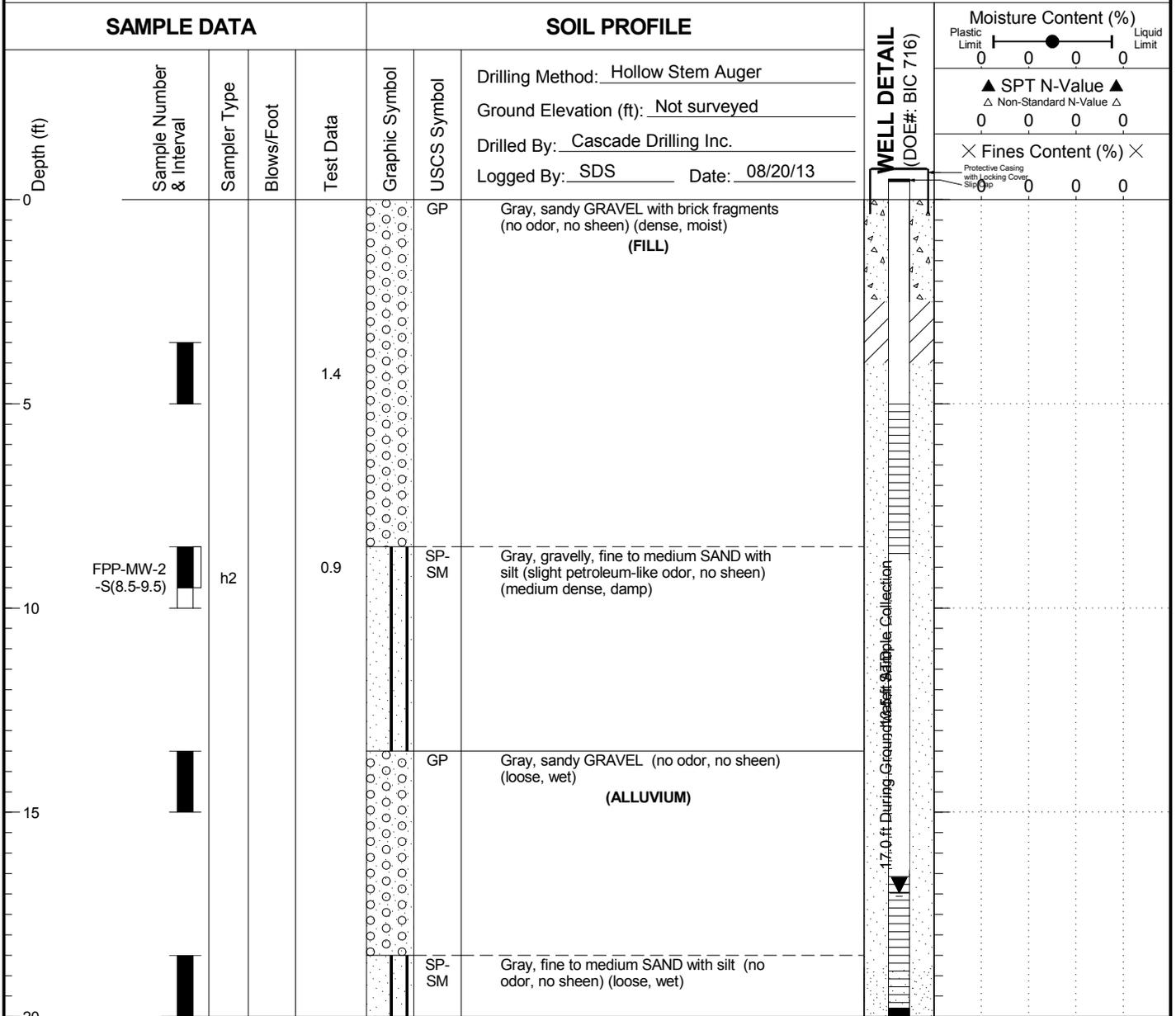
Yakima Mill Site
Yakima, WA

Log of Boring FPP-MW-1

Figure
E-22

FPP-MW-2

LAI Project No: 1148007.010



Boring Completed 08/20/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466687.30
East: 1641250.11

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



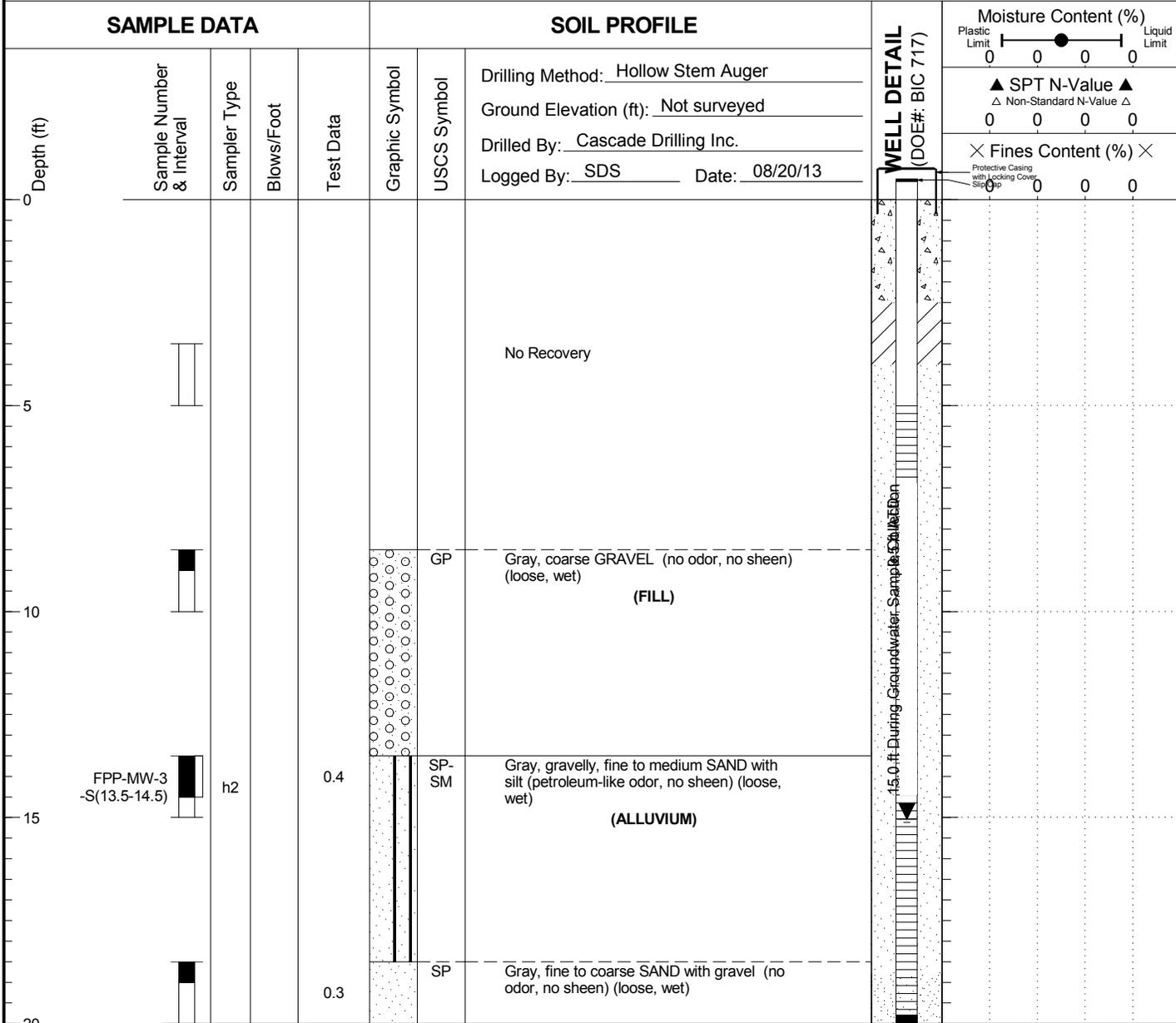
Yakima Mill Site
Yakima, WA

Log of Boring FPP-MW-2

Figure
E-23

FPP-MW-3

LAI Project No: 1148007.010



1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Yakima Mill Site
Yakima, WA

Log of Boring FPP-MW-3

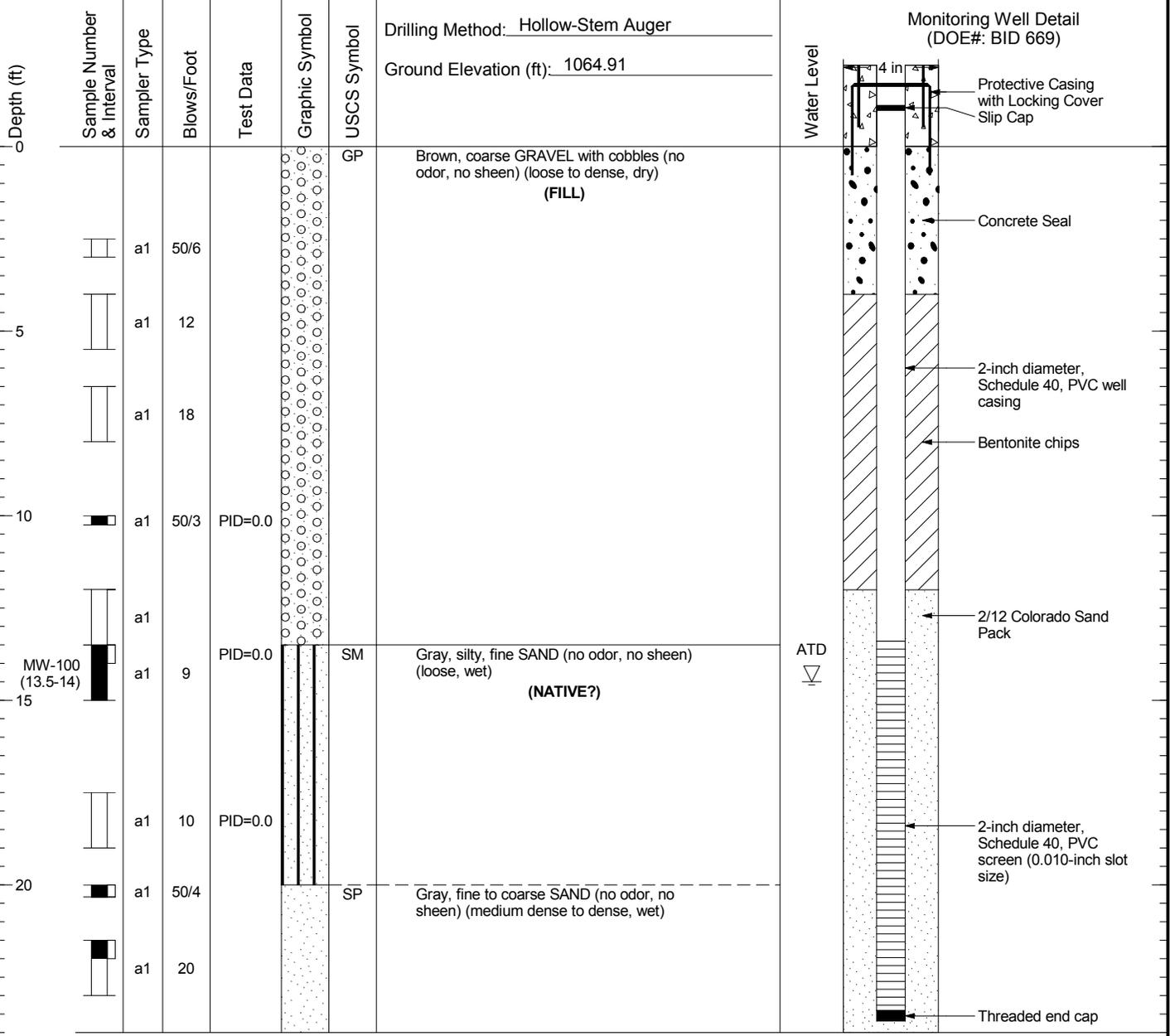
Figure
E-24

MW-100

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 09/10/14
Total Depth of Boring = 24.0 ft.

Monitoring Well Completed 09/11/14
Elevation at Top of Protective Casing = 1066.46 ft.
Elevation at Top of Monitoring Well Casing = 1065.72 ft.
Total Depth of Monitoring Well = 23.7 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.010.011 3/10/15 N:\PROJECTS\1148008.010.011.GPJ WELL LOG

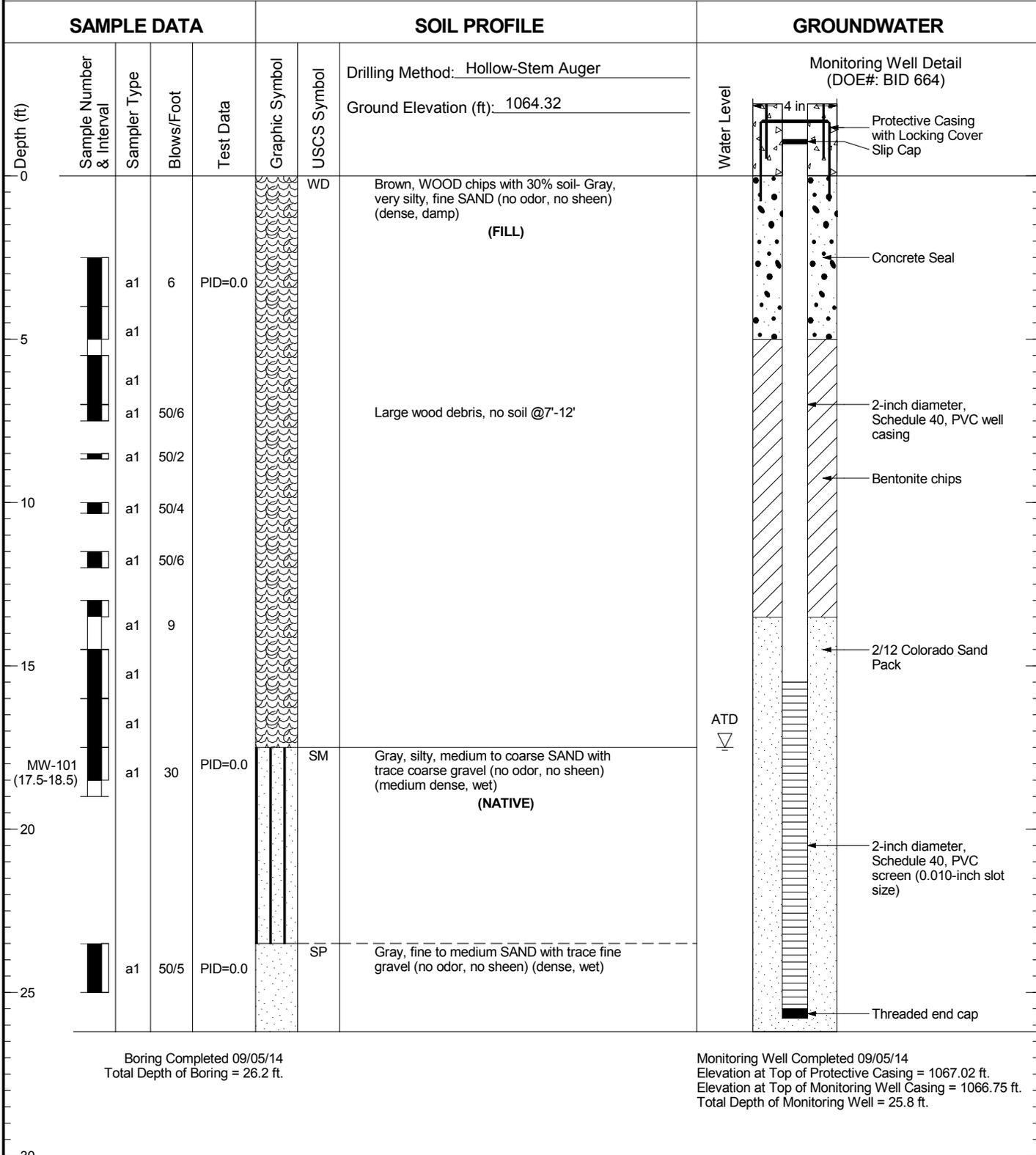


Closed City of Yakima Landfill Site
Yakima, Washington

Log of Monitoring Well MW-100

Figure E-25

MW-101



1148008.010.011 3/10/15 N:\PROJECTS\1148008.010.011.GPJ WELL LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

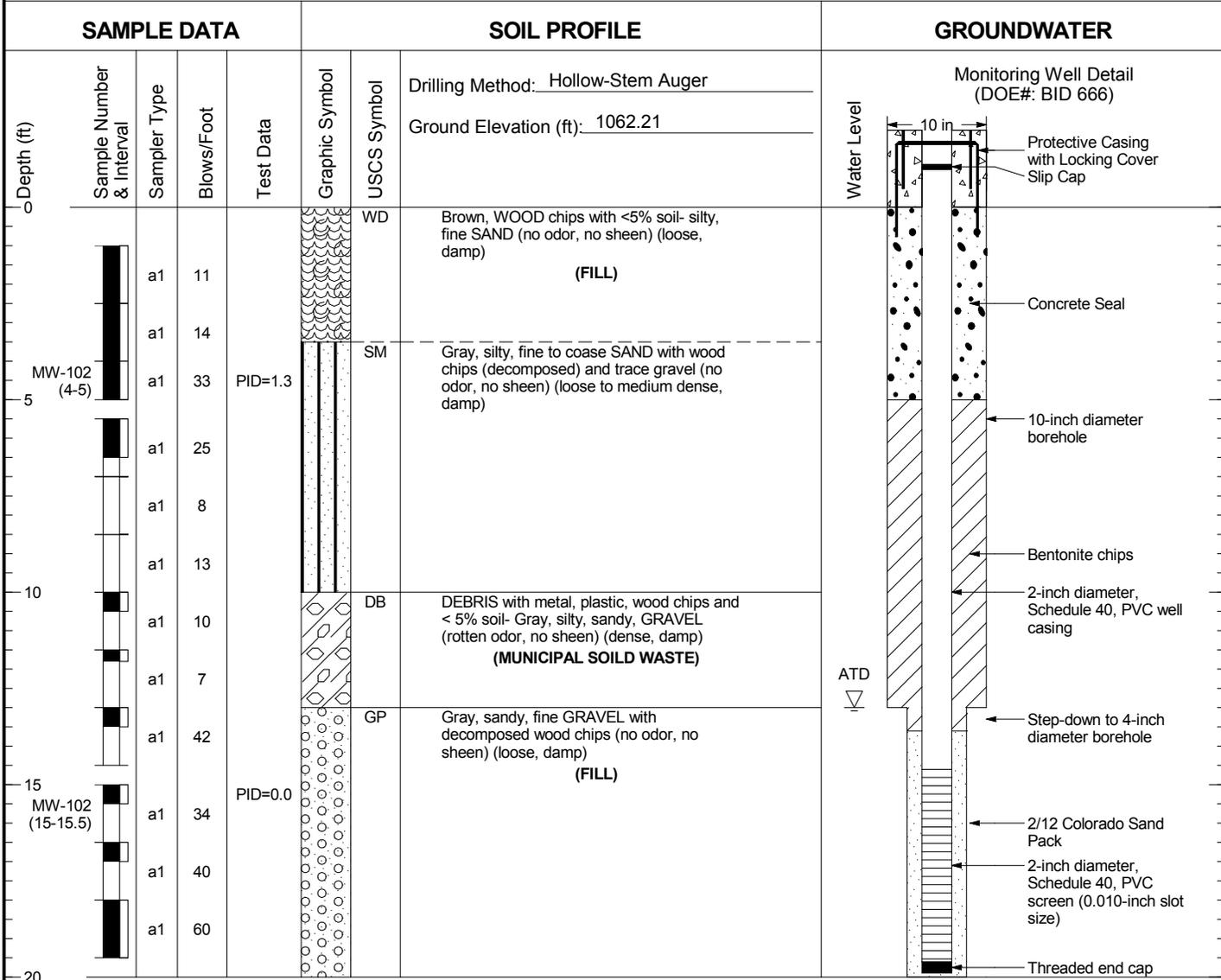


Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Monitoring Well MW-101

Figure
E-26

MW-102



Boring Completed 09/08/14
Total Depth of Boring = 20.0 ft.

Monitoring Well Completed 09/08/14
Elevation at Top of Protective Casing = 1064.86 ft.
Elevation at Top of Monitoring Well Casing = 1064.37 ft.
Total Depth of Monitoring Well = 19.9 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.010.011 3/10/15 N:\PROJECTS\1148008.010.011.GPJ WELL LOG

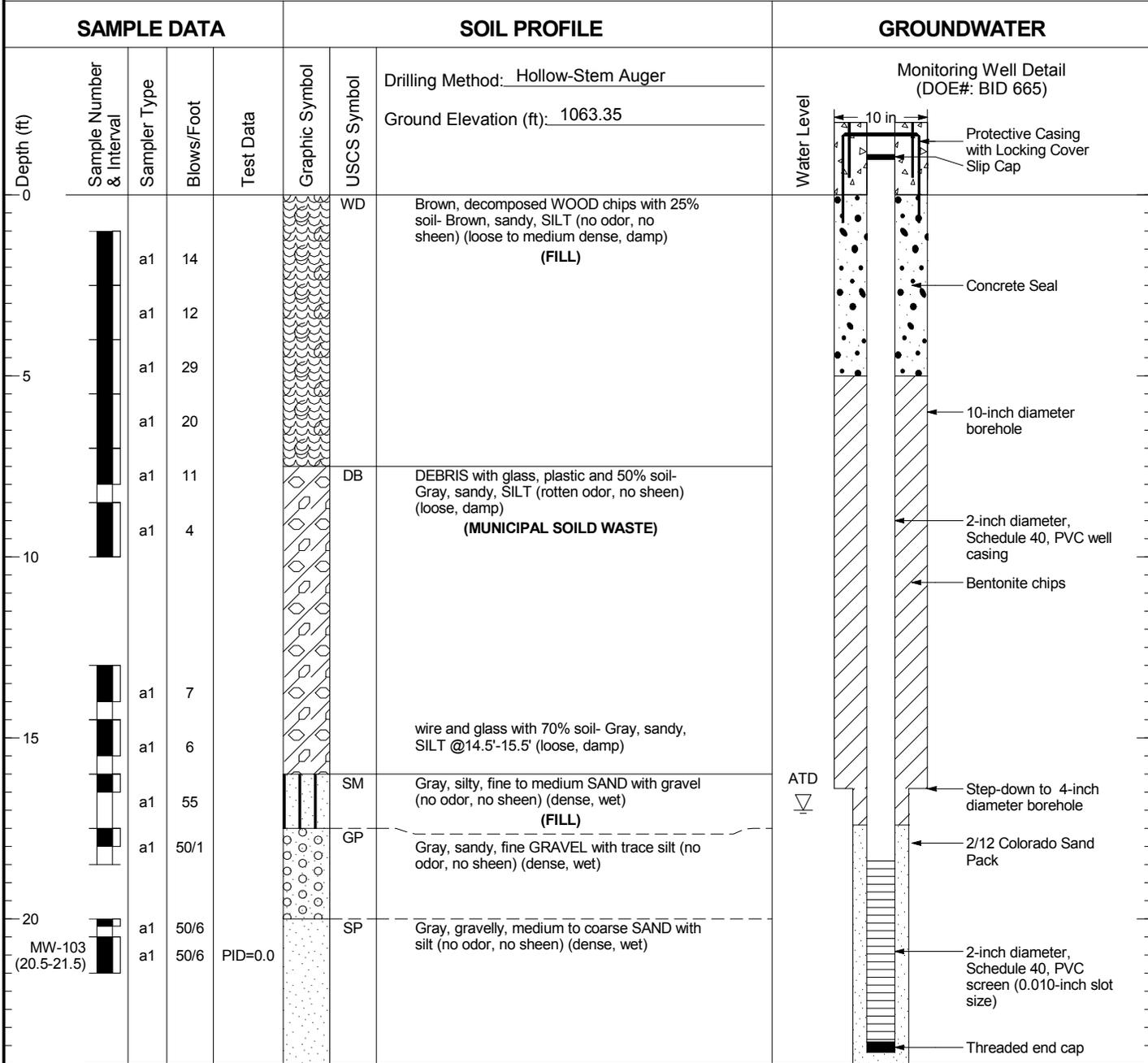


Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Monitoring Well MW-102

Figure
E-27

MW-103



Boring Completed 09/04/14
Total Depth of Boring = 24.0 ft.

Monitoring Well Completed 09/05/14
Elevation at Top of Protective Casing = 1065.60 ft.
Elevation at Top of Monitoring Well Casing = 1065.11 ft.
Total Depth of Monitoring Well = 23.7 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.010.011 3/10/15 N:\PROJECTS\1148008.010.011.GPJ WELL LOG

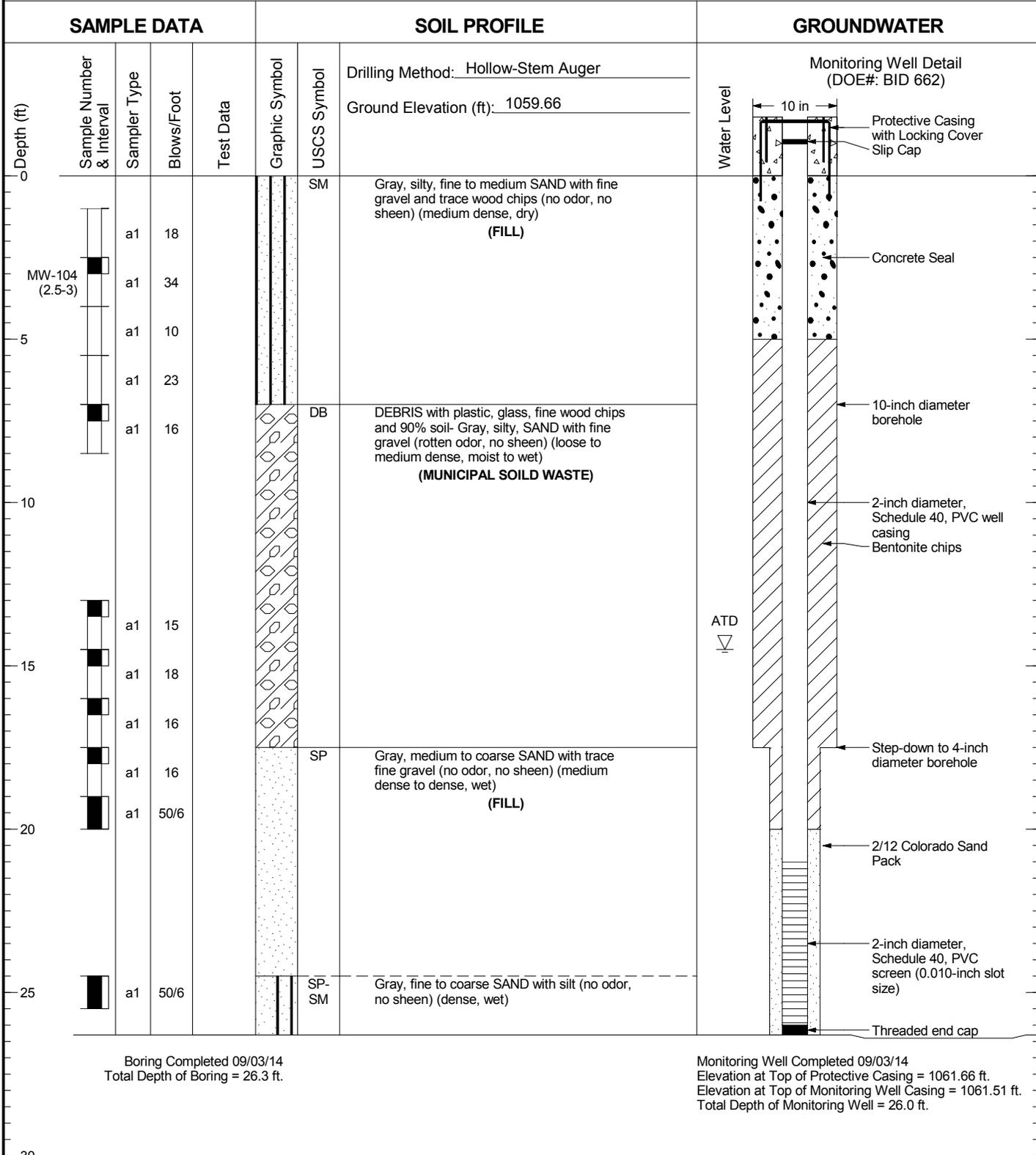


Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Monitoring Well MW-103

Figure
E-28

MW-104



Boring Completed 09/03/14
Total Depth of Boring = 26.3 ft.

Monitoring Well Completed 09/03/14
Elevation at Top of Protective Casing = 1061.66 ft.
Elevation at Top of Monitoring Well Casing = 1061.51 ft.
Total Depth of Monitoring Well = 26.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.010.011 3/10/15 N:\PROJECTS\1148008.010.011.GPJ WELL LOG

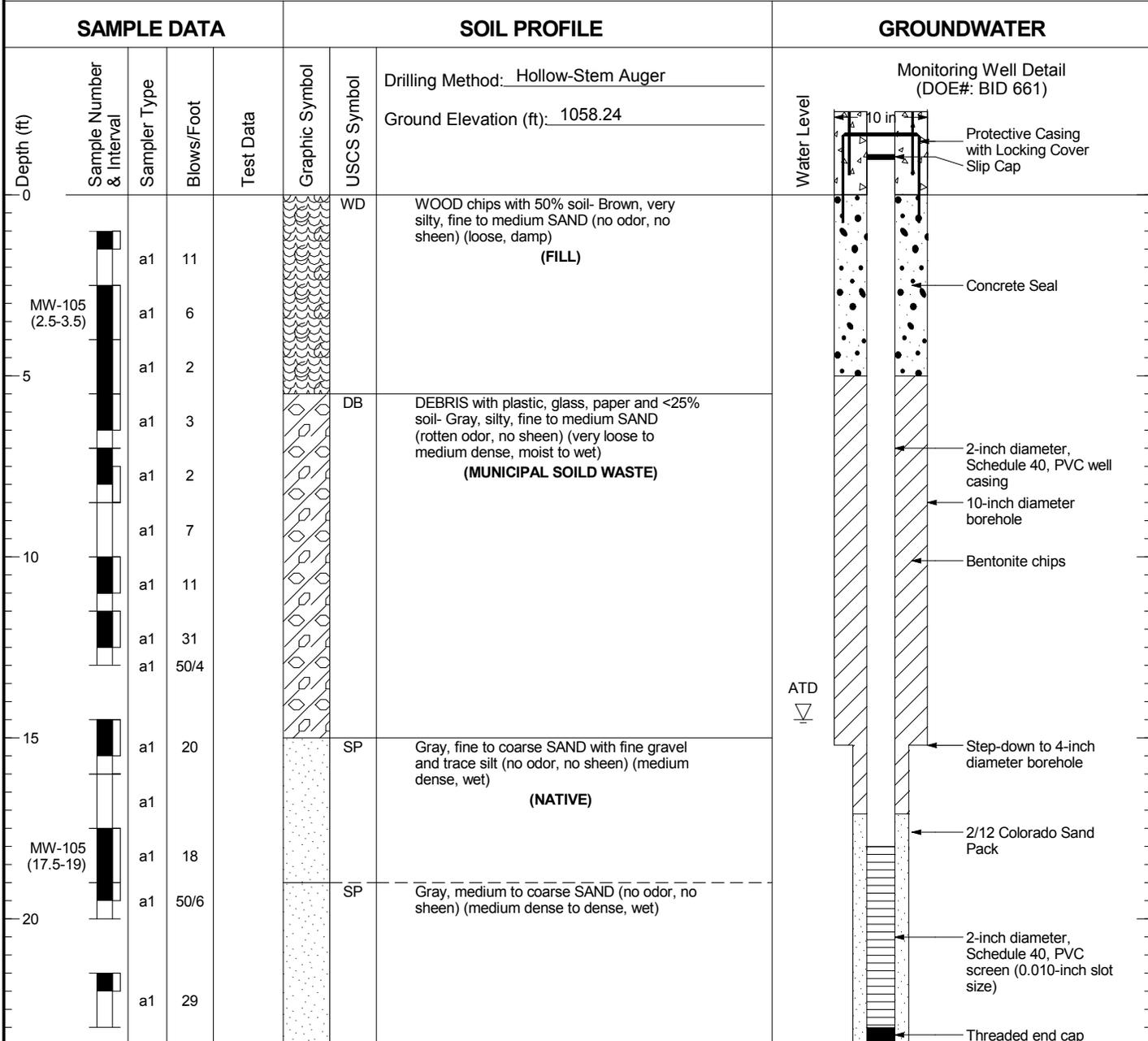


Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Monitoring Well MW-104

Figure
E-29

MW-105



Boring Completed 09/02/14
Total Depth of Boring = 23.5 ft.

Monitoring Well Completed 09/02/14
Elevation at Top of Protective Casing = 1060.41 ft.
Elevation at Top of Monitoring Well Casing = 1059.60 ft.
Total Depth of Monitoring Well = 23.4 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.010.011 3/10/15 N:\PROJECTS\1148008.010.011.GPJ WELL LOG

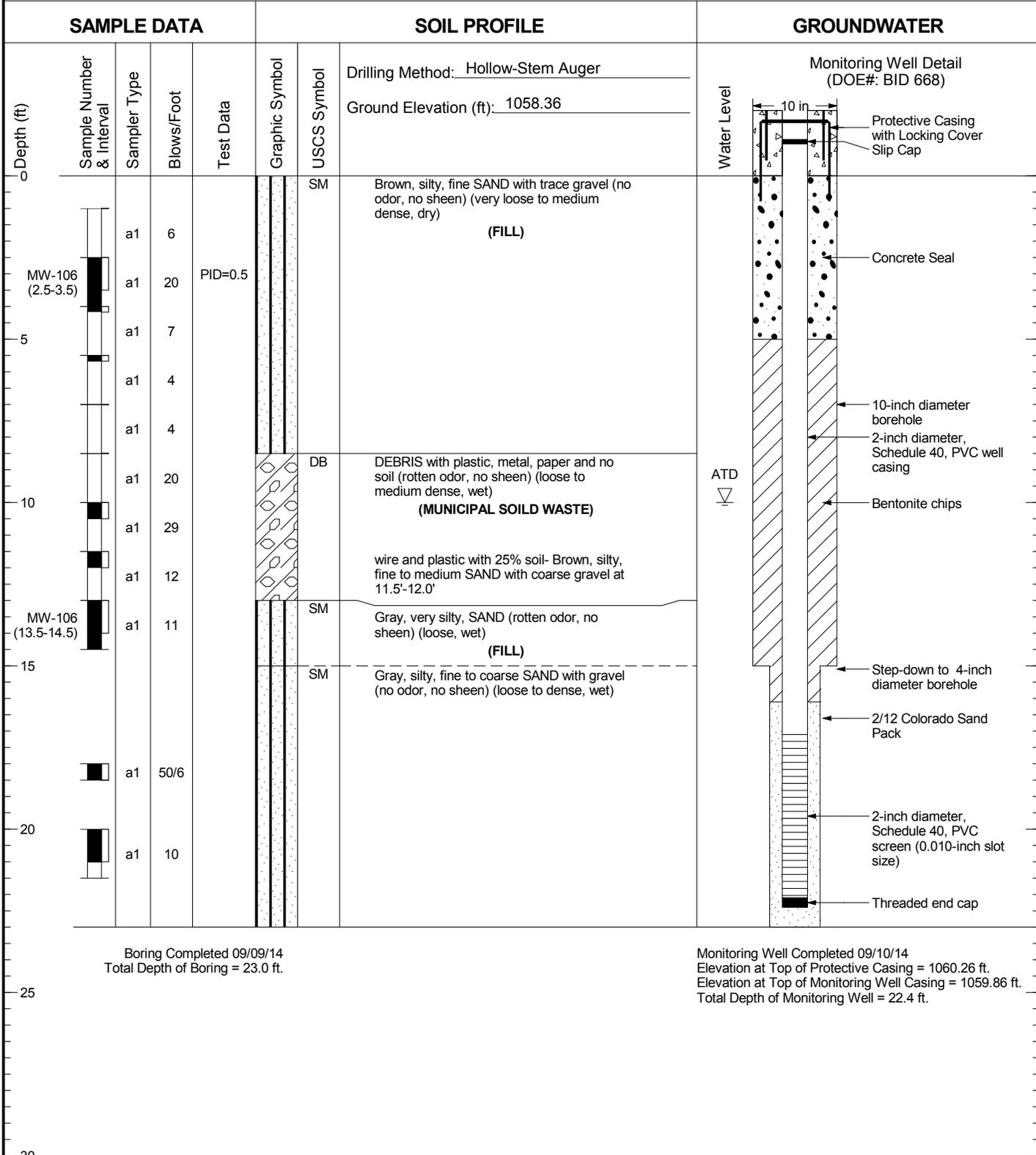


Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Monitoring Well MW-105

Figure
E-30

MW-106



Boring Completed 09/09/14
Total Depth of Boring = 23.0 ft.

Monitoring Well Completed 09/10/14
Elevation at Top of Protective Casing = 1060.26 ft.
Elevation at Top of Monitoring Well Casing = 1059.86 ft.
Total Depth of Monitoring Well = 22.4 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.010.011 3/10/15 N:\PROJECTS\1148008.010.011.GPJ WELL LOG

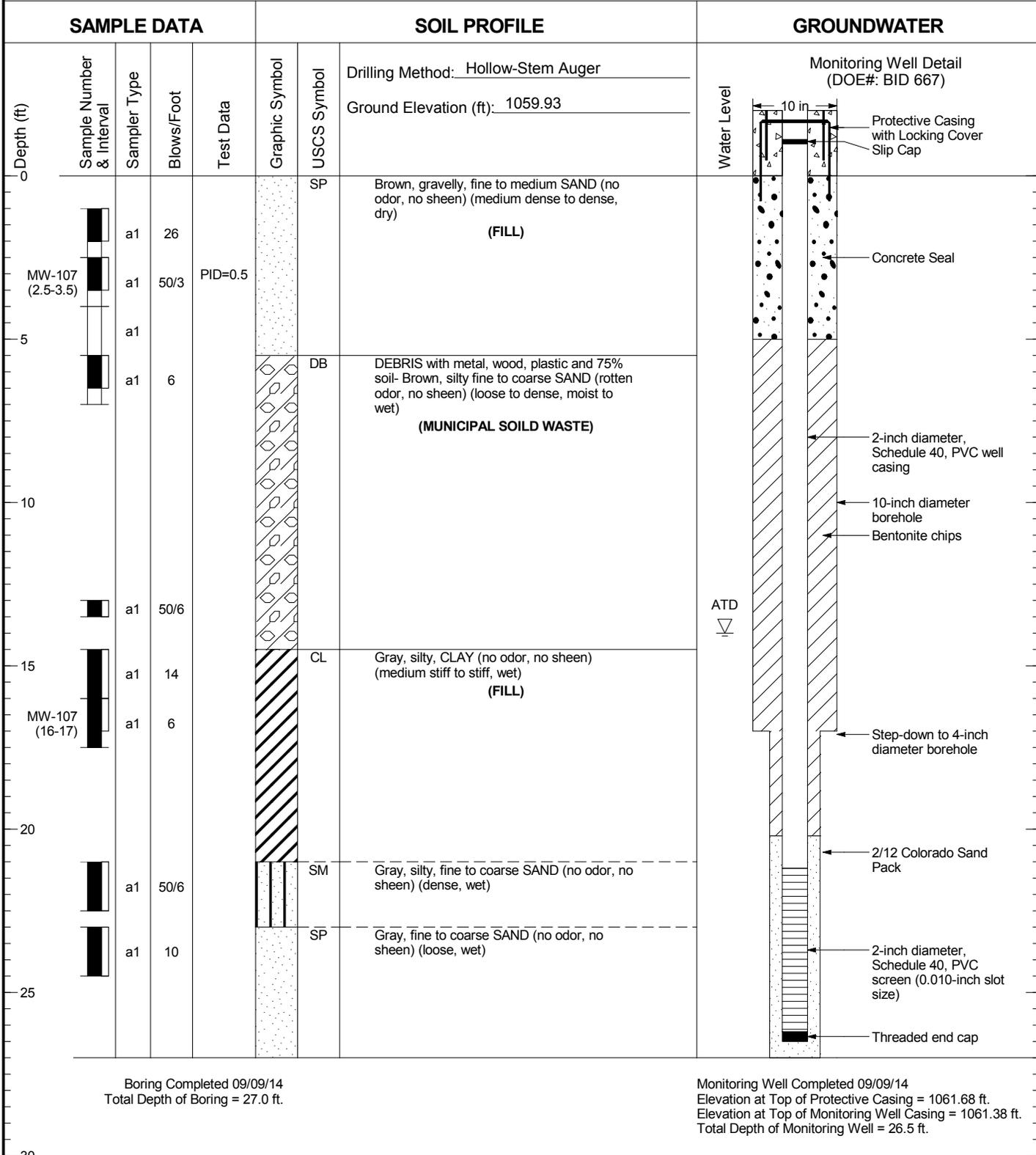


Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Monitoring Well MW-106

Figure
E-31

MW-107



Boring Completed 09/09/14
Total Depth of Boring = 27.0 ft.

Monitoring Well Completed 09/09/14
Elevation at Top of Protective Casing = 1061.68 ft.
Elevation at Top of Monitoring Well Casing = 1061.38 ft.
Total Depth of Monitoring Well = 26.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.010.011 3/10/15 N:\PROJECTS\1148008.010.011.GPJ WELL LOG

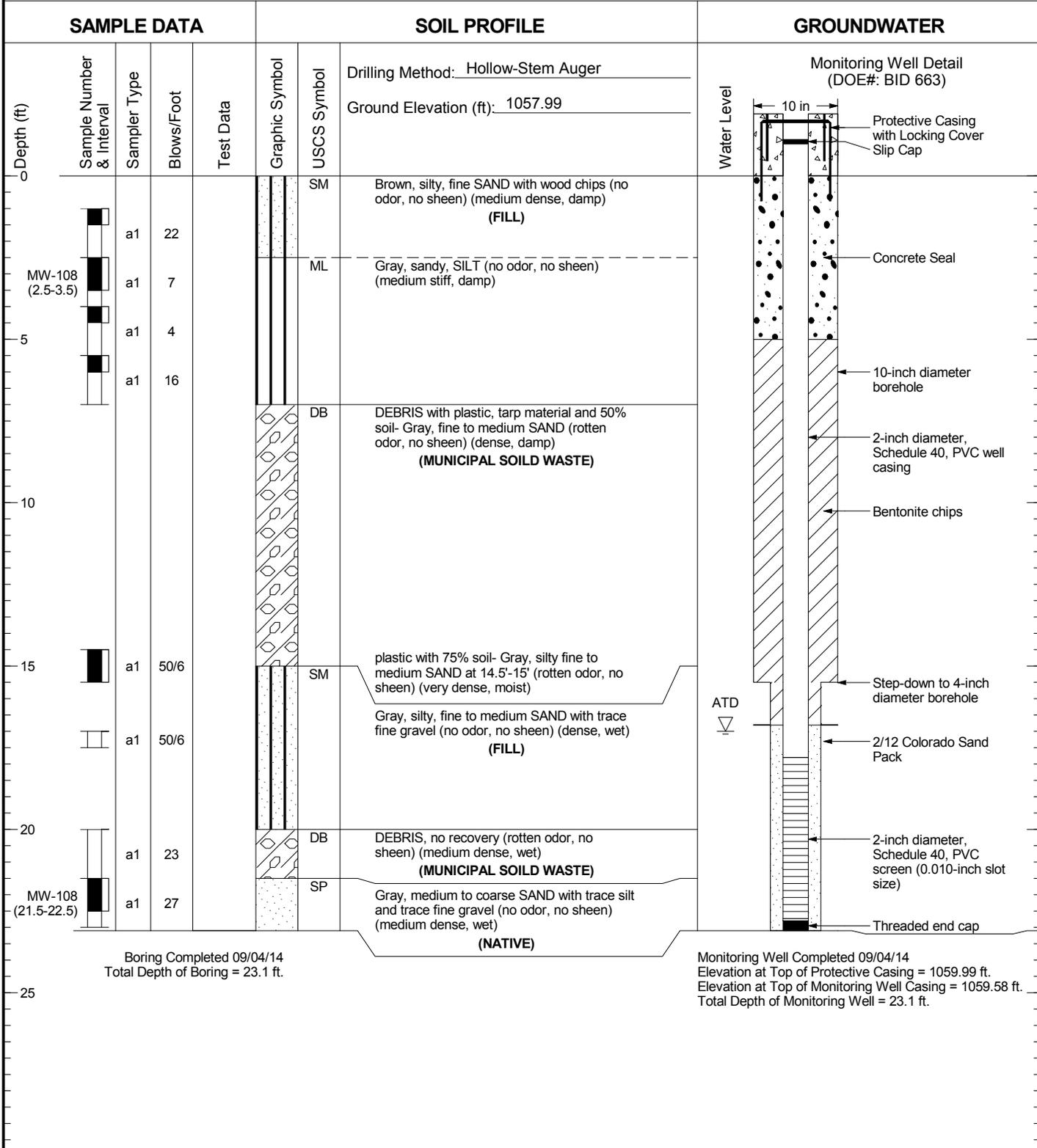


Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Monitoring Well MW-107

Figure
E-32

MW-108



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.010.011 3/10/15 N:\PROJECTS\1148008.010.011.GPJ WELL LOG



Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Monitoring Well MW-108

Figure
E-33

MW-109

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	<div style="text-align: right;">Monitoring Well Detail (DOE#: BID 670)</div>
	Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>1059.30</u>						
0					SM	Brown, silty, fine SAND (no odor, no sheen) (dense, damp to wet) (FILL)	Water Level
5	a1	50/3					4 in
	a1	50/2					Protective Casing with Locking Cover Slip Cap
10	a1	50/2					Concrete Seal
	a1	50/6					2-inch diameter, Schedule 40, PVC well casing
15	a1	50/6			SP-SM	Brown, fine to coarse SAND with silt and fine gravel (no odor, no sheen) (dense, wet) (NATIVE?)	Bentonite chips
	a1	50/6					2/12 Colorado Sand Pack
20	a1	50/6					ATD
	a1	18					2-inch diameter, Schedule 40, PVC screen (0.010-inch slot size)
25							Threaded end cap

Boring Completed 09/11/14
Total Depth of Boring = 24.0 ft.

Monitoring Well Completed 09/11/14
Elevation at Top of Protective Casing = 1062.15 ft.
Elevation at Top of Monitoring Well Casing = 1061.50 ft.
Total Depth of Monitoring Well = 23.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.010.011 3/10/15 N:\PROJECTS\1148008.010.011.GPJ WELL LOG



Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Monitoring Well MW-109

Figure
E-34

Exploratory Test Pit Logs

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-1A
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 25, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 3.5
COORDINATES _____ **INITIAL WATER LEVEL** ▽
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
								LOG DECK fill, wood debris with gravel, black, fine gravel, wet to saturated, loose @ 1 foot: Fabric LANDFILL COVER fill, gravelly silt, black, fine to coarse gravel, moist, frozen		
					5			LANDFILL DEBRIS fill, glass, cardboard, plastic with coarse black gravel Bottom of Test Pit @ 3.5 feet	5	
					10				10	
					15				15	
					20				20	
					25				25	
					30				30	
					35				35	

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-1B
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 25, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 3.5
COORDINATES _____ **INITIAL WATER LEVEL** ∇
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ∇
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
								LOG DECK fill, wood debris with gravel, black, fine gravel, wet to saturated, loose LANDFILL COVER fill, gravelly silt, black, fine to coarse gravel, moist, frozen LANDFILL DEBRIS fill, glass, cardboard, plastic with coarse black gravel Bottom of Test Pit @ 3.5 feet		
					5				5	
					10				10	
					15				15	
					20				20	
					25				25	
					30				30	
					35				35	

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-1C
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 25, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 8.5
COORDINATES _____ **INITIAL WATER LEVEL** ▽
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
							X	LOG DECK fill, wood debris with gravel, black, fine gravel, wet to saturated, loose		
					5		X	LANDFILL COVER fill, gravels to cobbles with silty sandy matrix, black, fine to coarse gravel, moist, frozen	5	
							X	LANDFILL MIXED WITH COVER MATERIAL fill, gravelly silt, black, fine to coarse gravel to cobbles, moist, frozen		
					10		X	LANDFILL DEBRIS fill, glass, cardboard, metals cans with coarse black gravel, decomposition odor Bottom of Test Pit @ 8.5 feet	10	
					15				15	
					20				20	
					25				25	
					30				30	
					35				35	

BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-1D
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 25, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 6.0
COORDINATES _____ **INITIAL WATER LEVEL** ▽
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
							X X X X	LOG DECK fill, wood debris with gravel, black, fine gravel, wet to saturated, loose		
							X X X X	LANDFILL COVER fill, silty sandy gravel, black, fine to coarse gravel, moist, frozen		
					5	ML		LANDFILL DEBRIS fill, glass, cardboard, metals cans	5	
								SANDY SILT (ML), dark gray, fine-grained sand, trace coarse gravel, damp, very stiff		
								Bottom of Test Pit @ 6 feet		
					10				10	
					15				15	
					20				20	
					25				25	
					30				30	
					35				35	

BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-1E
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 25, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 12.0
COORDINATES _____ **INITIAL WATER LEVEL** ▽
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
							X	LOG DECK fill, wood debris with gravel, black, fine gravel, wet to saturated, loose		
					5		X	SILTY SAND (ML) fill, dark gray, 80% fine- to medium-grained sand, trace fine gravel, damp, medium stiff, trace of organics, slight odor @ 3.5 feet: 2" of Landfill Debris, plastic bags	5	
					10		X	STEEL RAILROAD TIES AND LUMBER fill	10	
					12		X	SANDY SILT (ML), dark gray, 40 % fine-grained sand, wet to saturated, medium stiff, trace of organics @ 12 feet: Capillary fringe, trace of water and buried log Bottom of Test Pit @ 12 feet	12	
					15				15	
					20				20	
					25				25	
					30				30	
					35				35	

BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-2
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 25, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 13.0
COORDINATES _____ **INITIAL WATER LEVEL** ▽
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
					5			LOG DECK fill, wood debris with gravel, black, fine gravel, wet to saturated, loose	5	
								SILTY GRAVEL (GM) fill, dark gray, 20% fine gravel, moist, stiff		
								COBBLES WITH SILTY SAND (GP) fill, dark gray, 80% fine- to medium-grained sand, damp, loose, trace of red bricks		
					10	GP		@ 7 feet: Lumber Debris, plywood 2x4s GRAVEL TO COBBLES WITH SILTY SAND (GP), dark gray, 40% coarse gravel to 40% cobbles, 20% silty medium-grained sand	10	
					15			Bottom of Test Pit @ 13 feet	15	
					20				20	
					25				25	
					30				30	
					35				35	

BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-3A
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 25, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 11.0
COORDINATES _____ **INITIAL WATER LEVEL** ▽ 11.0
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
							X	WOOD DEBRIS fill, dark reddish brown, dry, loose GRAVELLY SAND (SP) fill, gray, fine- to medium-grained sand, dry, loose, t-shirt		
					5	ML		SANDY SILT (ML), very dark gray, 40% fine-grained sand, moist, loose, medium stiff, some gravel	5	
					10			SANDY COBBLES, dark gray, fine- to coarse-grained sand, moist to wet, loose	10	
								Bottom of Test Pit @ 11 feet	▽ 11.0	
					15				15	
					20				20	
					25				25	
					30				30	
					35				35	

BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-3B
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 25, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 10.5
COORDINATES _____ **INITIAL WATER LEVEL** ∇
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ∇
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
					5		X	WOOD DEBRIS fill, dark reddish brown, dry, loose SANDY SILT (ML) fill, very dark gray, 40% fine-grained sand, moist, loose, medium stiff, some gravel	5	
							X	LOG DECK DEBRIS WITH GRAVEL fill, dark brown, 35% coarse gravel, dry, loose to medium dense		
					10		X	SILTY SANDY GRAVEL (GP) fill, very dark gray, 60% coarse gravel, 40% fine- to coarse-grained sand, moist, dense, trace of cobbles, lots of concrete debris with log debris	10	
					15		X	LANDFILL DEBRIS fill, glass, cardboard, plastic with coarse black gravel Bottom of Test Pit @ 10.5 feet	15	
					20		X		20	
					25		X		25	
					30		X		30	
					35		X		35	

BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-4A
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 25, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 10.5
COORDINATES _____ **INITIAL WATER LEVEL** ▽
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
					5			WOOD DEBRIS fill, dark reddish brown, dry, loose SILTY SAND (SM) with wood debris fill, dark brown, fine-to medium-grained sand, damp, medium dense	5	
					10			SILTY SAND (SM) with landfill debris fill, dark gray, moist, medium dense, slight burnt look, landfill debris not continuous	10	
					10.5			Bottom of Test Pit @ 10.5 feet	10.5	
					15				15	
					20				20	
					25				25	
					30				30	
					35				35	

BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-4B
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 25, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 7.5
COORDINATES _____ **INITIAL WATER LEVEL** ∇
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ∇
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
					5			WOOD DEBRIS fill, dark reddish brown, dry, loose SILTY SAND (SM) with wood debris fill, dark brown, fine-to medium-grained sand, damp, medium dense	5	
					10			SILTY SAND (SM) with landfill debris fill, dark gray, moist, medium dense, slight burnt look, landfill debris not continuous	10	
					10			Bottom of Test Pit @ 7.5 feet	10	
					15				15	
					20				20	
					25				25	
					30				30	
					35				35	

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-5A
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 25, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 13.5
COORDINATES _____ **INITIAL WATER LEVEL** ∇
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ∇
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
							X	WOOD DEBRIS fill, dark reddish brown, dry, loose		
					5		X	WOOD DEBRIS fill, 12" logs with bark and pieces of wood	5	
					10		X		10	
					15	GP	X	@ 13 feet: Log pond bottom SILTY SANDY COBBLES (GP), very dark gray, 40% fine-to coarse-grained sand, moist, dense Bottom of Test Pit @ 13.5 feet	15	
					20		X		20	
					25		X		25	
					30		X		30	
					35		X		35	

BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-5B
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 26, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 16.5
COORDINATES _____ **INITIAL WATER LEVEL** ▽
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
					5		X	WOOD DEBRIS WITH GRAVEL fill, dark reddish brown, dry, loose	5	
					10		X	SILTY SANDY COBBLES (GP) fill, very dark gray, 40% fine- to coarse-grained sand, angular cobbles, moist, dense	10	
					15		X	WOOD DEBRIS fill, 12" logs with bark and pieces of wood	15	
					20			Bottom of Test Pit @ 16.5 feet	20	
					25				25	
					30				30	
					35				35	

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-5C
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 26, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 9.0
COORDINATES _____ **INITIAL WATER LEVEL** ▽
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
					5		X	WOOD DEBRIS WITH GRAVEL fill, dark reddish brown, dry, loose	5	
					8		X	SANDY GRAVELLY SILT (ML) fill, blue-gray, fine- to coarse-grained sand, with cobbles, moist, dense	8	
					10		X	LANDFILL DEBRIS fill, glass bottles, paper Bottom of Test Pit @ 8 feet	10	
					15				15	
					20				20	
					25				25	
					30				30	
					35				35	

BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-6
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 26, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 8.5
COORDINATES _____ **INITIAL WATER LEVEL** ▽
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
							X	GRAVELLY SANDY SILT (ML) fill, dark gray, fine- to coarse-grained sand, moist, medium stiff		
							X	Rubber tubing and cobbles WOOD DEBRIS WITH SANDY SILT fill, reddish brown, fine- to medium-grained sand		
					5		X	CONCRETE WASTE fill	5	
							X	LANDFILL DEBRIS fill, tire, paper, bottles, plastic, bicycle tires		
					10			Bottom of Test Pit @ 8.5 feet	10	
					15				15	
					20				20	
					25				25	
					30				30	
					35				35	

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BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** TP-7
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 26, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 4.0
COORDINATES _____ **INITIAL WATER LEVEL** ▽
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
					5			WOOD DEBRIS AND SILTY SAND fill, dark reddish brown, fine- to medium-coarse sand, dry, loose SILTY GRAVELLY SAND (SW) fill, very dark gray, fine to coarse sub-rounded gravel, fine- to coarse-grained sand, moist, dense @ 3 feet: Hit a 2" water line, no sheen on water Bottom of Test Pit @ 4 feet	5	
					10				10	
					15				15	
					20				20	
					25				25	
					30				30	
					35				35	



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TEST PIT NUMBER TP-8

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CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/26/09 COMPLETED 1/26/09 GROUND ELEVATION 1062.46 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0						WOOD WASTE, brown, organic, intermixed with gravel, moist.	0.6
5				GM		SILTY GRAVEL, yellow brown, fine to coarse gravel, rounded cobbles, some fines.	1057.5
7.0				ML		@ 7.0 Feet: Geotextile fabric. SANDY SILT, dark brown, some fine- to coarse-grained sand, trace gravel, moist.	1055.5
9.0						MUNICIPAL SOLID WASTE, plastic bags, wire, trash.	1053.5
14.0						Test pit completed at 14.0 feet.	1048.5

REMARKS

Pit 20' x 5'

∇ Water level at time of excavation.

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Figure F-16



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TEST PIT NUMBER TP-10

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/26/09 COMPLETED 1/26/09 GROUND ELEVATION 1069.30 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							
						WOOD WASTE, brown, organic, intermixed gravel and wood debris, bark, moist.	0.6
5							
						8.0 1061.3 SANDY GRAVEL, gray, fine to coarse gravel, some fine- to coarse-grained sand, cobbles, moist.	
				GW		8.5 1060.8	
						MUNICIPAL SOLID WASTE, gray, intermixed plastic, trash, gravel, moist, strong metal odor.	
10							0.6
							1058.8

Test pit completed at 10.5 feet.

REMARKS

Pit 15' x 5'

Water level at time of excavation.

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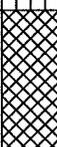
Figure F-18



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TEST PIT NUMBER TP-11

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/26/09 COMPLETED 1/26/09 GROUND ELEVATION 1057.05 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
				SW-SM		GRAVELLY SAND, dark brown, fine- to coarse-grained sand, some fine to coarse rounded gravel, little fines, dry to moist @ 3.5 feet: Becomes brown, intermixed trash, plastic, metal.
5				ML		5.5 1051.6 SILT, dark blue-gray, moist to wet, some waste.
						7.0 1050.1 MUNICIPAL SOLID WASTE, gray, some sand, plastic, metal, foam, construction debris.
						9.0 1048.1 Test pit completed at 9.0 feet.

REMARKS

Pit 10' x 5'

▽ Water level at time of excavation.

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Figure F-19



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TEST PIT NUMBER TP-13

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/26/09 COMPLETED 1/26/09 GROUND ELEVATION 1060.09 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
				GM		SILTY GRAVEL, dark brown, fine to coarse gravel, some fines, some organics. @ 1.5 feet: Becomes olive gray with little fine- to coarse-grained sand.
						WOOD WASTE, red, fine fragments, damp.
5						SAND, olive gray, fine- to medium-grained sand, trace silt, trace gravel.
10				SP		
12.5						

Test pit completed at 12.5 feet.

REMARKS

Pit 20' x 5'

∇ Water level at time of excavation.

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Figure F-21



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TEST PIT NUMBER TP-14

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/26/09 COMPLETED 1/26/09 GROUND ELEVATION 1059.88 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
0							
				GM		SILTY GRAVEL, dark brown, some fines, little sand and organics, moist.	1058.9
						WOOD WASTE, bark fragments.	
							1056.9
				SM		SILTY SAND, olive gray, fine- to medium-grained sand, some fines, little medium to coarse gravel, moist.	
5							1054.9
						WOOD WASTE.	1054.4
				SP		SAND, gray, fine- to medium-grained, trace gravel and silt, moist.	
							1052.4
						WOOD WASTE.	1051.9
				SP		SAND, gray, fine- to medium-grained, some laminar staining, moist.	
10							1049.9

Test pit completed at 10.0 feet.

REMARKS

Pit 15' x 5'

Water level at time of excavation.

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Figure F-22



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TEST PIT NUMBER TP-15

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CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/26/09 COMPLETED 1/26/09 GROUND ELEVATION 1045.95 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator ∇ AT TIME OF EXCAVATION 7.5 ft / Elev 1038.5 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER EXCAVATION _____

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
				GM		SILTY GRAVEL, brown, fine to coarse, some cobbles, some fines, little fine- to coarse-grained sand. 1045.0
				GW		SANDY GRAVEL, yellow brown, fine to coarse gravel, some fine- to coarse-grained sand, cobbles up to 12", well-rounded, flattened horizontal alignment, moist to wet. 1038.5
5						
						7.5 ∇

Test pit completed at 7.5 feet.

REMARKS

∇ Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-23



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TEST PIT NUMBER TP-16

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/26/09 COMPLETED 1/26/09 GROUND ELEVATION 1048.37 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
				GM		SILTY GRAVEL, brown, fine to coarse gravel, some fines, little fine- to coarse-grained sand, dry to damp.	1046.4
				SM		SILTY SAND, light brown, some fines, trace gravel, moist.	
5							
				GW		SANDY GRAVEL, fine to coarse gravel, cobbles (12"), some fine- to coarse-grained sand, wet.	1041.4
							1039.4

Test pit completed at 9.0 feet.

REMARKS

Pit 15' x 5'
Municipal solid waste from 4.0 to 7.0 feet in north end of test pit.

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT. 3/18/09

Figure F-24



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TEST PIT NUMBER TP-17

PAGE 1 OF 1

CLIENT <u>City of Yakima</u>	PROJECT NAME <u>City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>1/26/09</u> COMPLETED <u>1/26/09</u>	GROUND ELEVATION <u>1049.89 ft</u> HOLE SIZE _____
EXCAVATION DRILLING CONTRACTOR <u>Wyser Construction</u>	GROUND WATER LEVELS:
EXCAVATION DRILLING METHOD <u>Excavator</u>	AT TIME OF EXCAVATION <u>Dry</u>
LOGGED BY <u>B. Robinson</u> CHECKED BY _____	AT END OF <u>---</u>
NOTES _____	AFTER EXCAVATION <u>---</u>

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
				GM		SILTY GRAVEL, dark brown, fine to coarse gravel, some fines, little fine- to coarse-grained sand, dry.	1048.4
				GW		SANDY GRAVEL, brown, fine to coarse gravel, some fine- to coarse-grained sand.	
							1045.9
5				SM		SILTY SAND, light brown, fine- to medium-grained sand, some fines, moist.	
							1040.9
				GW		SANDY GRAVEL, yellow brown, fine to coarse gravel, some fine- to coarse-grained sand.	
10							1039.9

Test pit completed at 10.0 feet.

REMARKS

Municipal solid waste from 4.0 to 7.0 feet in north end of test pit.

Water level at time of drilling.

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Figure F-25



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TEST PIT NUMBER TP-18

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/26/09 COMPLETED 1/26/09 GROUND ELEVATION 1053.42 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
						WOOD WASTE (Up to 8" pieces). @ 1.5 feet: Wood waste intermixed with gravel, some organics, and sand.
						1049.4 SILTY SAND, olive gray, fine- to medium-grained, some fines, moist.
5				SM		1046.4
						7.0

Test pit completed at 7.0 feet.

REMARKS

Pit 20' x 5'
 Municipal waste below 3.0 feet in north end of test pit.

Water level at time of excavation.

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Figure F-26



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TEST PIT NUMBER TP-19

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CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/27/09 COMPLETED 1/27/09 GROUND ELEVATION 1054.45 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
						WOOD WASTE, some logs.
5						
				GP-GM		5.0 1049.5 SILTY GRAVEL, brown, fine to coarse gravel, rounded, some fines, little fine- to coarse-grained sand, moist.
				SM		8.0 1046.5 SILTY SAND: Olive grey, fine grained, moist
10						10.0 1044.5

Test pit completed at 10.0 feet.

REMARKS

Pit 25' x 5'
 Municipal solid waste at 6.0 feet in north end of test pit.

∇ Water level at time of drilling.

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Figure F-27



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 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/27/09 COMPLETED 1/27/09 GROUND ELEVATION 1055.31 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER EXCAVATION _____

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
						WOOD WASTE.
						1052.8
				GP-GM		SILTY GRAVEL, yellow brown, fine to coarse gravel, some fines, little fine- to coarse-grained sand, dry to moist.
5						1050.3
				SM		SILTY SAND, light brown, fine sand, some fines, trace gravel.
						@ 8.0 feet: Becomes olive gray.
						1046.3
						Test pit completed at 9.0 feet.

REMARKS

Pit 45' x 10'
 Municipal solid waste below 5.0 feet in north end of test pit.

∇ Water level at time of drilling.

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Figure F-28



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CLIENT City of Yakima

PROJECT NAME City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DATE STARTED 1/27/09 COMPLETED 1/27/09

GROUND ELEVATION 1058.27 ft HOLE SIZE _____

EXCAVATION DRILLING CONTRACTOR Wyser Construction

GROUND WATER LEVELS:

EXCAVATION DRILLING METHOD Excavator

AT TIME OF EXCAVATION Dry

LOGGED BY B. Robinson CHECKED BY _____

AT END OF ---

NOTES _____

AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
						WOOD WASTE, pieces up to 24".
						1056.3
						2.0
						SANDY GRAVEL, white and gray, fine to coarse gravel, some fine- to coarse-grained sand, large pieces of concrete (5" up to 2'), some asphalt, metal pipes, rotting odor.
5				GW		
						1050.3
						8.0

Test pit completed at 8.0 feet.

REMARKS

Municipal solid waste below 4.0 feet in north end of test pit.

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-29



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TEST PIT NUMBER TP-22

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/27/09 COMPLETED 1/27/09 GROUND ELEVATION 1058.06 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
						WOOD WASTE, dark reddish brown, some intermixed gravel, moist.	
5							
				SM		SILTY SAND, olive gray, fine- to medium-grained sand, some fines, moist, strong odor.	1052.1
			TP-22 Waste			MUNICIPAL SOLID WASTE, plastic bags, metal, foam.	1050.6
						Test pit completed at 8.5 feet.	1049.6

REMARKS

Pit 20' x 5'

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-30



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TEST PIT NUMBER TP-23

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CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/27/09 COMPLETED 1/27/09 GROUND ELEVATION 1054.00 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0						WOOD WASTE, some fine to coarse gravel, little fine- to coarse-grained sand.	
							1052.5
				GW		SANDY GRAVEL, brown, fine to coarse gravel, some cobbles, some fine- to coarse-grained sand, dry to damp.	
							1050.5
						MUNICIPAL SOLID WASTE, metal, plastics, concrete.	
5							1049.0
				SM		SILTY SAND, olive gray, fine- to medium-grained sand, some fines, moist.	
							1046.5

Test pit completed at 7.5 feet.

REMARKS

Pit 20' x 5'
Municipal solid waste pinches out in the south end of the test pit.

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-31



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TEST PIT NUMBER TP-24

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CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/27/09 COMPLETED 1/27/09 GROUND ELEVATION 1050.72 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
				GM		SILTY GRAVEL , brown, fine to coarse gravel, some cobbles, some fines, little fine- to coarse-grained sand. @ 1.0 feet: Becomes intermixed with municipal solid waste (plastic bags, wire).	1048.2
				SM		SILTY SAND , light olive brown grading to olive gray, fine- to medium-grained sand, some fines, moist.	1045.2
5				GW		SANDY GRAVEL , olive brown, fine to coarse gravel, some cobbles, well-rounded to flattened, some fine- to coarse-grained sand, moist.	1043.2

Test pit completed at 7.5 feet.

REMARKS

Pit 14' x 5'

Water level at time of excavation.

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Figure F-32

TEST PIT NUMBER TP-25

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CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/27/09 COMPLETED 1/27/09 GROUND ELEVATION 1051.48 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
				GM		SILTY GRAVEL , brown, fine to coarse gravel, some fines, little fine- to coarse-grained sand, little wood waste, dry. @ 1.0 foot: Becomes intermixed with wood waste and municipal solid waste (plastic bags, wire, concrete).	1047.5
						MUNICIPAL SOLID WASTE , gray, tires, glass, plastic bags, plastic.	
5				SM		SILTY SAND , light olive brown to olive gray, fine-grained sand, moist.	1046.0
				GW		SANDY GRAVEL , olive gray, fine to coarse gravel, cobbles up to 18", well rounded to flattened, some fine- to coarse-grained sand, moist.	1045.0
						Test pit completed at 7.0 feet.	1044.5

REMARKS

Pit 25' x 7'
Municipal solid waste pinches out in the south end of the test pit.

∇ Water level at time of excavation.

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Figure F-33



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TEST PIT NUMBER TP-26

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/27/09 COMPLETED 1/27/09 GROUND ELEVATION 1051.18 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
				GM		SILTY GRAVEL, brown, fine to coarse gravel, some fines, little fine- to coarse-grained sand, dry to moist, intermixed wood, bark, logs (18" diameter), concrete.	
						MUNICIPAL SOLID WASTE, plastic bags, bottles, foam, metal, sand, and gravel.	1047.2
5				SM		SILTY SAND, light olive brown, fine- to medium-grained, some fines.	1046.2
							1044.7

Test pit completed at 6.5 feet.

REMARKS

Pit 30' x 7'
Municipal solid waste ends in the south end of the test pit and becomes thicker in the north end.

Water level at time of excavation.

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Figure F-34



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TEST PIT NUMBER TP-27

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/27/09 COMPLETED 1/27/09 GROUND ELEVATION 1056.69 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
5				GM		SILTY GRAVEL, brown, fine to coarse gravel, some fines, intermixed fine- to coarse-grained sand, wood waste, moist.
						6.5 1050.2 MUNICIPAL SOLID WASTE, metal cans, bottles, plastic, wood.
						9.0 1047.7 9.5 1047.2 SANDY GRAVEL, olive gray, fine to coarse gravel, rounded to well rounded, some fine- to coarse-grained sand, moist. Test pit completed at 9.5 feet.

REMARKS

Pit 30' x 7'
Municipal solid waste pinches out in the south end of the test pit and becomes thicker in the north end.

∇ Water level at time of excavation.

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Figure F-35



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TEST PIT NUMBER TP-28

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/27/09 COMPLETED 1/27/09 GROUND ELEVATION 1057.58 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							
				GM		SILTY GRAVEL, brown, fine to coarse gravel, some fines, little fine- to coarse-grained sand, dry to damp.	1056.6
						WOOD WASTE, logs (up to 18" in diameter) 3'-10' long, intermixed silty sand.	
5						MUNICIPAL SOLID WASTE, plastic, metal, bags, piping, wire, concrete, moist.	1050.1
						SANDY GRAVEL, olive gray, fine to coarse gravel, cobbles, some fine- to coarse-grained sand, moist to wet.	1048.1
10				GW			1045.1
12.5							

Test pit completed at 12.5 feet.

REMARKS

Pit 50' x 5'
 Municipal solid waste near the south end of the test pit.

∇ Water level at time of excavation.

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Figure F-36



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TEST PIT NUMBER TP-29

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CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/27/09 COMPLETED 1/27/09 GROUND ELEVATION 1061.49 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							
						WOOD WASTE, with fine to coarse gravel, some fines, little fine- to coarse-grained sand, dry to moist.	
							1059.5
				GM		SILTY GRAVEL, dark grayish brown, fine to coarse gravel, some fines, little fine- to coarse-grained sand, moist.	
							1057.0
5						MUNICIPAL SOLID WASTE dark gray, plastic bags, paper, wood, and wire.	1
							1056.0

Test pit completed at 5.5 feet.

REMARKS

Pit 10' x 5'

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-37



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TEST PIT NUMBER TP-30

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/27/09 COMPLETED 1/27/09 GROUND ELEVATION 1062.24 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
						WOOD WASTE.	1061.7
				GM		SILTY GRAVEL, fine to coarse gravel, some fines, little fine- to coarse-grained sand, intermixed with wood waste. @ 3.0 feet: Becomes brown.	
						MUNICIPAL SOLID WASTE, wire, plastic bags, concrete, and wood.	1058.2
5							
							1055.2

Boring completed at 7.0 feet.

REMARKS

Pit 35' x 5'

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-38



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TEST PIT NUMBER TP-31

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CLIENT <u>City of Yakima</u>	PROJECT NAME <u>City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>1/27/09</u> COMPLETED <u>1/27/09</u>	GROUND ELEVATION <u>1063.25 ft</u> HOLE SIZE _____
EXCAVATION DRILLING CONTRACTOR <u>Wyser Construction</u>	GROUND WATER LEVELS:
EXCAVATION DRILLING METHOD <u>Excavator</u>	AT TIME OF EXCAVATION <u>Dry</u>
LOGGED BY <u>B. Robinson</u> CHECKED BY _____	AT END OF <u>---</u>
NOTES _____	AFTER EXCAVATION <u>---</u>

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
						SILTY GRAVEL, fine to coarse gravel, some fines, some wood waste.
					1.0	1062.3
				GM		SILTY GRAVEL, olive gray, fine to coarse gravel, some fines, little fine- to coarse-grained sand.
					3.5	1059.8
5						MUNICIPAL SOLID WASTE, plastic, metal, wire, glass, bottles, and paper.
10						
					13.0	1050.3
				SM		SILTY SAND, olive gray, fine- to medium-grained sand, some fines, loose, wet.
					14.5	1048.8
Test pit completed at 14.5 feet.						

REMARKS

Pit 30' x 5'

∇ Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-39



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TEST PIT NUMBER TP-32

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CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/28/09 COMPLETED 1/28/09 GROUND ELEVATION 1063.34 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
				SP-SM		GRAVELLY SAND, fine- to medium-grained sand, some fine to coarse gravel, little fines, little wood waste, dry to damp. 1062.3
				GW		SANDY GRAVEL, olive gray, fine to coarse gravel, well rounded, some cobbles, some fine- to coarse-grained sand. 1061.3
				SM		SILTY SAND, light olive brown, fine sand, some fines, moist.
5						5.0 to 6.5 feet: Grades to light olive gray. 1056.8
						6.5

Test pit completed at 6.5 feet.

REMARKS

Pit 30' x 5'

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-40



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TEST PIT NUMBER TP-33

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CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/28/09 COMPLETED 1/28/09 GROUND ELEVATION 1064.15 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER EXCAVATION _____

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
5				GP-GM		<p>SILTY GRAVEL, dark brown, fine to coarse gravel, some fines, little sand and cobbles, some wood waste. @ 0.5 foot: Becomes olive gray with some fine- to coarse-grained sand, little fines, little construction debris, moist.</p> <p>@ 4.5 feet: Becomes brown with some wood waste.</p>
						<p>MUNICIPAL SOLID WASTE, plastic, paper, metal, cans, and bottles. (Bulk sample weighed in excavator bucket).</p>
		TCLP	TP-33			
						1058.7
						1054.7

Test pit completed at 9.5 feet.

REMARKS

Pit 45' x 5'

∇ Water level at time of drilling.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/25/09

Figure F-41



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TEST PIT NUMBER TP-34

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/28/09 COMPLETED 1/28/09 GROUND ELEVATION 1063.54 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator ∇ AT TIME OF EXCAVATION 11.0 ft / Elev 1052.5 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
				GM		SILTY GRAVEL, light brown, fine to coarse gravel, some fines, dense, dry to damp. @ 0.5 foot: Becomes light olive gray, with little fine- to coarse-grained sand, medium-dense.	1061.0
						MUNICIPAL SOLID WASTE, construction debris, concrete, and plastic, some gray silty sand.	
5							
10				ML		∇ SANDY SILT, dark olive gray, fine sand, wet.	1053.0
						Test pit completed at 11.5 feet.	1052.0

REMARKS

Pit 20' x 5'

∇ Water level at time of excavation.

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Figure F-42



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TEST PIT NUMBER TP-35

PAGE 1 OF 1

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/28/09 COMPLETED 1/28/09 GROUND ELEVATION 1063.46 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator ∇ AT TIME OF EXCAVATION 9.0 ft / Elev 1054.5 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
5				GM		SILTY GRAVEL , brown, fine to coarse gravel, some fines, little fine- to coarse-grained sand, little wood waste. @ 0.5 foot: Becomes olive gray, with some cobbles, little wood and concrete, damp to moist.
						MUNICIPAL SOLID WASTE , construction debris, large rubble, asphalt, wire, plastic, 30% soil, moist.
				SM		SILTY SAND , olive gray, fine-grained sand, wet, strong rotting odor.
						∇ Test pit completed at 9.0 feet.

REMARKS

Pit 15' x 5'

∇ Water level at time of excavation.

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Figure F-43



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TEST PIT NUMBER TP-36

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/28/09 COMPLETED 1/28/09 GROUND ELEVATION 1063.74 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
				GM		SILTY GRAVEL , brown, fine to coarse gravel, some fines, little fine- to coarse-grained sand, damp. @ 0.5 foot: Becomes olive gray, with some well-rounded cobbles and concrete, moist.	1060.7
						WOOD WASTE , some gravel, moist.	
						MUNICIPAL SOLID WASTE , construction debris, large concrete rubble, ~30-40% soil by volume, moist. @ 7.5 feet: Waste becomes bottles, paper, plastic bags, concrete, rubble, ~30% soil. (Bulk sample weighed on scales)	1059.2
5							
10							
							1052.7

Test pit completed at 11.0 feet.

REMARKS

Pit 15' x 5'

Water level at time of excavation.

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Figure F-44



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TEST PIT NUMBER TP-37

PAGE 1 OF 1

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/28/09 COMPLETED 1/28/09 GROUND ELEVATION 1064.40 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER EXCAVATION _____

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
				GP-GM		<p>SANDY GRAVEL, dark gray, fine to coarse gravel, some fine- to coarse-grained sand, little fines, very dense, damp.</p> <p>@ 1.5 feet: Geotextile fabric. Becomes dark olive gray, with well-rounded gravel and cobbles.</p>
5						<p>MUNICIPAL SOLID WASTE, paper, plastic bags, wood, grass clippings, glass, and some silt. (Bulk Sample 3,660 lbs gross)</p>
						<p>1059.9</p> <p>1057.4</p>

Test pit completed at 7.0 feet.

REMARKS

∇ Water level at time of drilling.

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Figure F-45



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TEST PIT NUMBER TP-39

PAGE 1 OF 1

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/28/09 COMPLETED 1/28/09 GROUND ELEVATION 1064.62 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Thurber CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
				GM		SILTY GRAVEL, dark brownish gray, fine to coarse gravel with cobbles, some fines, little sand, moist, little wood waste. @ 1.0 foot: Geotextile fabric.	
							2.5 1062.1
						WOOD WASTE, brown, fine bark.	3.0 1061.6
				GM		SILTY GRAVEL, dark brownish gray, fine to coarse gravel with cobbles, some fines, little sand, moist, little wood waste.	4.0 1060.6
5						MUNICIPAL SOLID WASTE, wood, plastic, metal cans, wire, and paper.	
							8.0 1056.6

Test pit completed at 8.0 feet.

REMARKS

∇ Water level at time of excavation.

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Figure F-47



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TEST PIT NUMBER TP-40

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CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/28/09 COMPLETED 1/28/09 GROUND ELEVATION 1064.41 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Thurber CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
						WOOD WASTE, bark and chips, shredded wood pieces, pole wood on surface, burried logs to 2.5'.	
							1062.9
				GM		SILTY GRAVEL, gray, fine to coarse gravel, few cobbles, some fines, little sand, moist.	1062.4
						MUNICIPAL SOLID WASTE.	1061.9
				GM		SILTY GRAVEL, dark gray, fine to coarse gravel, some fines, little sand.	
						MUNICIPAL SOLID WASTE, plastic, paper, metal, wood.	1060.9
5							
							1058.4

Test pit completed at 6.0 feet.

REMARKS

Water level at time of excavation.

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Figure F-48



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TEST PIT NUMBER TP-41

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/28/09 COMPLETED 1/28/09 GROUND ELEVATION 1065.59 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Thurber CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
				GM		SILTY GRAVEL, light gray to gray, fine to coarse gravel, some fines, little sand, moist.
						WOOD WASTE, reddish brown, shredded bark, soil layers (3" to 6" thick), pungent odor, some small logs.
5						
				GM		SILTY GRAVEL, dark gray, fine to coarse gravel, some fines, little sand, moist.
10						WOOD WASTE, logs, some chips and silty sand.
15						

REMARKS

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

(Continued Next Page)

Figure F-49 (Page 1 of 2)



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TEST PIT NUMBER TP-41

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
15						
						WOOD WASTE, logs, some chips and silty sand. (continued)
					16.0	1049.6

Test pit completed at 16 feet.

REMARKS

∇ Water level at time of excavation.

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TEST PIT NUMBER TP-42

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/28/09 COMPLETED 1/28/09 GROUND ELEVATION 1062.27 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Thurber CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
						WOOD WASTE, brown, silt, sand, gravel, fine bark and wood chips.	
							1060.3
				GM		SILTY GRAVEL, gray, fine to coarse gravel, some cobbles, some fines, little sand, moist.	
							1059.3
						WOOD WASTE, brown, compact, silty sand, gravel, moist, ~20% soil by volume.	
5							
						@ 6.0 feet: Becomes reddish brown to yellowish brown, bark chips, trunk wood, scattered buried logs.	
10							
15							1047.3
Test pit completed at 15.0 feet.							

REMARKS

▽ Water level at time of excavation.

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Figure F-50



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TEST PIT NUMBER TP-43

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CLIENT <u>City of Yakima</u>	PROJECT NAME <u>City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>1/28/09</u> COMPLETED <u>1/28/09</u>	GROUND ELEVATION _____ HOLE SIZE _____
EXCAVATION DRILLING CONTRACTOR <u>Wyser Construction</u>	GROUND WATER LEVELS:
EXCAVATION DRILLING METHOD <u>Excavator</u>	AT TIME OF EXCAVATION <u>Dry</u>
LOGGED BY <u>B. Thurber</u> CHECKED BY _____	AT END OF <u>---</u>
NOTES _____	AFTER EXCAVATION <u>---</u>

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
5						WOOD WASTE, dark brown, fine to coarse gravel, fines, sand, moist, (~20% soil by volume).
10				GM		9.5 SILTY GRAVEL, gray, fine to coarse gravel, abundant cobbles, some fines, little sand, moist.
15						11.0 WOOD WASTE, brown, silt, sand, gravell, chips, shredded wood, logs.

REMARKS

∇ Water level at time of excavation.

(Continued Next Page)

Figure F-51 (Page 1 of 2)

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 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
15						
						WOOD WASTE, brown, silt, sand, gravell, chips, shredded wood, logs. (continued)
					19.0	

Test pit completed at 19.0 feet.

REMARKS

∇ Water level at time of excavation.

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Figure F-51 (Page 2 of 2)



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TEST PIT NUMBER TP-44

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/29/09 COMPLETED 1/29/09 GROUND ELEVATION 1063.75 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator ∇ AT TIME OF EXCAVATION 7.0 ft / Elev 1056.8 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
0							
						ASPHALT.	1063.6
				GM		SILTY GRAVEL, brown, fine to coarse gravel, well-rounded, some fines, little fine- to coarse-grained sand.	
							1061.3
				GW		SANDY GRAVEL, olive gray, fine to coarse gravel, some fine to coarse sand, little fines, moist.	
							1059.3
5						WOOD WASTE, bark chips, moist to wet.	
							1056.3

Test pit completed at 7.5 feet.

REMARKS

∇ Water level at time of excavation.

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Figure F-52



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TEST PIT NUMBER TP-45

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 1/27/09 COMPLETED 1/29/09 GROUND ELEVATION 1066.08 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
						0.3 ASPHALT	1065.8
				GP		ROAD BASE, 3/4" crushed rock	1065.1
				GM		SILTY GRAVEL, olive gray, fine to coarse gravel, rounded to well-rounded, few cobbles, some fines, little fine- to coarse-grained sand, few metal pieces, moist.	
5							
							1060.1

Test pit completed at 6.0 feet.

REMARKS

Pit 20' x 10'

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US GDT 3/18/09

Figure F-53



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TEST PIT NUMBER TP-46

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/11/09 COMPLETED 2/11/09 GROUND ELEVATION 1069.76 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
5						WOOD WASTE.
10						
15						

REMARKS

Pit 30' x 5'

∇ Water level at time of excavation.

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TEST PIT NUMBER TP-47

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/11/09 COMPLETED 2/11/09 GROUND ELEVATION 1069.84 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
5						WOOD WASTE, fine, bark mulch, damp.
10						@ 9.0 feet: Becomes coarse, logs, branches, and bark, damp.
15						

REMARKS

Pit 27' x 5'

Water level at time of excavation.

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(Continued Next Page)



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TEST PIT NUMBER TP-47

PAGE 2 OF 2

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20						WOOD WASTE, fine, bark mulch, damp. (continued)
						1046.8
				GW		SANDY GRAVEL, brown, fine to coarse gravel, some fine- to coarse-grained sand, moist.
						1045.8

Test pit completed at 24.0 feet.

REMARKS

Pit 27' x 5'

Water level at time of excavation.

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Figure F-55 (Page 2 of 2)



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TEST PIT NUMBER TP-48

PAGE 1 OF 2

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/11/09 COMPLETED 2/11/09 GROUND ELEVATION 1069.66 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
5						WOOD WASTE, wood chips, some bark, damp.
10						
15						

REMARKS

Pit 27' x 5'

Water level at time of excavation.

(Continued Next Page)

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TEST PIT NUMBER TP-48

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
15							
						WOOD WASTE, wood chips, some bark, damp. (continued)	
20							
				GW	21.0		1048.7
					21.5	SANDY GRAVEL, gray, fine to coarse gravel, some fine- to coarse-grained sand, moist.	1048.2

Test pit completed at 21.5 feet.

REMARKS

Pit 27' x 5'

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-56 (Page 2 of 2)



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TEST PIT NUMBER TP-49

PAGE 1 OF 2

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/11/09 COMPLETED 2/11/09 GROUND ELEVATION 1069.44 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER EXCAVATION _____

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
5						WOOD WASTE, fine, bark and sawdust, damp.
10						@ 6.0 feet: Becomes coarse, logs, branches, bark, damp.
15						

REMARKS

Pit 26' x 5'

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

(Continued Next Page)

Figure F-57 (Page 1 of 2)



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TEST PIT NUMBER TP-49

PAGE 2 OF 2

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
20						WOOD WASTE, fine, bark and sawdust, damp. (continued)	
25				SP		GRAVELLY SAND, gray, fine- to coarse-grained sand, fine to coarse gravel, moist.	1044.4

24.5 1044.9
 25.0 1044.4

Test pit completed at 25.0 feet.

REMARKS

Pit 26' x 5'

Water level at time of excavation.

SLR GENERAL YAKIMA GPJ_GINT US_GDT 3/18/09

Figure F-57 (Page 2 of 2)



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TEST PIT NUMBER TP-51

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/11/09 COMPLETED 2/11/09 GROUND ELEVATION 1062.58 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							
						WOOD WASTE, fine, bark and sawdust, damp.	
5						SILTY GRAVEL, gray, coarse gravel, moist.	1057.6
				GM		MUNICIPAL SOLID WASTE, plastic, metal, glass, paper, yard waste, moist.	1056.6
10							
12.5							1050.1

Test pit completed at 12.5 feet.

REMARKS

Pit 15' x 5'

∇ Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-59



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TEST PIT NUMBER TP-53

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/11/09 COMPLETED 2/11/09 GROUND ELEVATION 1066.08 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	GRAPHIC LOG	MATERIAL DESCRIPTION
0					
					WOOD WASTE, fine, bark and sawdust, moist.
5					
					6.0 1060.1
					Test pit completed at 6.0 feet.

REMARKS

Pit 75' x 5'
Municipal solid waste was present from 4.0 to 6.0 feet in the southern 60' of the test pit, but not present in the northern end.

∇ Water level at time of excavation.

SLR GENERAL COPY - YAKIMA.GPJ GINT US.GDT. 3/18/09

Figure F-61



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 Bothell, Washington 98021
 Telephone: 425.402.8800
 SLR International Corp Fax: 425.402.8488

TEST PIT NUMBER TP-56

PAGE 1 OF 1

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/11/09 COMPLETED 2/11/09 GROUND ELEVATION 1069.22 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
5						WOOD WASTE, fine, bark and sawdust, damp.
6.0						@ 6.0 feet: Geotextile fabric.
10				GP		SANDY GRAVEL, gray, some crushed rock and cobbles, little municipal solid waste (edge of waste), moist.
11.0						1063.2 1058.2

Test pit completed at 11.0 feet.

REMARKS

Pit 13' x 5'

∇ Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-64



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Telephone: 425.402.8800
Fax: 425.402.8488

TEST PIT NUMBER TP-57

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/11/09 COMPLETED 2/11/09 GROUND ELEVATION 1062.81 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	GRAPHIC LOG	MATERIAL DESCRIPTION
0					
5					WOOD WASTE, fine, bark and sawdust, damp.
10					@ 8.0 feet: Becomes coarse, logs, branches and stumps, damp.
13.0					

Test pit completed at 13.0 feet.

1049.8

REMARKS

Pit 16' x 5'

∇ Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-65



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TEST PIT NUMBER TP-58

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/12/09 COMPLETED 2/12/09 GROUND ELEVATION 1060.54 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	GRAPHIC LOG	MATERIAL DESCRIPTION
0					
5					WOOD WASTE, fine, bark mulch, damp.
10					@ 10.0 feet: Becomes coarse, logs, branches, little scrap metal, damp.
15					

REMARKS

Pit 22' x 5'

 Water level at time of excavation.

(Continued Next Page)

Figure F-66 (Page 1 of 2)

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09



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TEST PIT NUMBER TP-58

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	GRAPHIC LOG	MATERIAL DESCRIPTION
15					
					WOOD WASTE, fine, bark mulch, damp. (continued)
				17.0	

1043.5

Test pit completed at 17.0 feet.

REMARKS

Pit 22' x 5'

Water level at time of excavation.

SLR GENERAL YAKIMA GPJ GINT US.GDT 3/18/09



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CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/12/09 COMPLETED 2/12/09 GROUND ELEVATION 1065.63 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER EXCAVATION _____

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
						WOOD WASTE, fine, wood chips and bark, damp.
						1061.6
5				GM		SILTY GRAVEL, gray, coarse, some fines, moist.
						1059.6

Test pit completed at 6.0 feet.

REMARKS

Pit 30' x 5'
 Municipal solid waste present from 4.0 to 6.0 feet in the western half of the test pit, but not present in the eastern half.

Water level at time of drilling.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/25/09

Figure F-67



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TEST PIT NUMBER TP-60

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/12/09 COMPLETED 2/12/09 GROUND ELEVATION 1071.78 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
5						WOOD WASTE, fine, damp.
9.0						1062.8
10				GP		SANDY GRAVEL, gray, coarse, some fine- to coarse-grained sand, little municipal solid waste, moist.
10.0						1061.8
12.0						WOOD WASTE, coarse, bark, some cobbles and sand, moist.
12.0						1059.8

Test pit completed at 12.0 feet.

REMARKS

Pit 18' x 5'

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US GDT 3/18/09

Figure F-68



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Telephone: 425.402.8800
Fax: 425.402.8488

TEST PIT NUMBER TP-61

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/12/09 COMPLETED 2/12/09 GROUND ELEVATION 1067.55 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
5						WOOD WASTE, fine, bark and sawdust, damp.
6.0						1061.6
				GM		SILTY GRAVEL, gray, medium to coarse, some fines, moist.
8.0						1059.6
10						MUNICIPAL SOLID WASTE, plastic, paper, glass, soil, moist, strong odor.
12.5						1055.1

Test pit completed at 12.5 feet.

REMARKS

Pit 16' x 5'

Water level at time of excavation.

SLR GENERAL YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-69



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TEST PIT NUMBER TP-63

CLIENT City of Yakima PROJECT NAME City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/12/09 COMPLETED 2/12/09 GROUND ELEVATION 1065.00 ft HOLE SIZE _____
 EXCAVATION DRILLING CONTRACTOR Wyser Construction GROUND WATER LEVELS:
 EXCAVATION DRILLING METHOD Excavator AT TIME OF EXCAVATION Dry
 LOGGED BY M. Staton CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER EXCAVATION ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
					0.5	ASPHALT.
					SP	GRAVELLY SAND, dark brown to gray, fine- to coarse-grained, some fine to coarse gravel, few cobbles, moist, few wood debris and metal debris.
5						
10						
					11.0	

@ 11.0 feet: Becomes moist.
 Test pit completed at 11.0 feet.

1054.0

REMARKS

Pit 15' x 5'

Water level at time of excavation.

SLR GENERAL - YAKIMA.GPJ GINT US.GDT 3/18/09

Figure F-71

MSW-TP-2

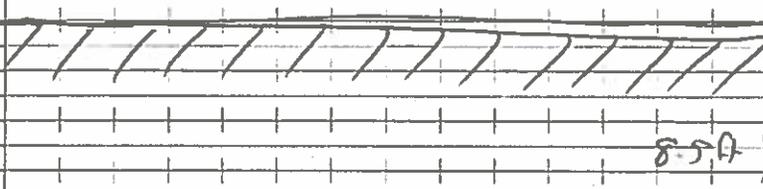
Exploration No. 2
Date 10/27/17 Hour 1030



Log of Test Pit

Project Name Yek Landfill Project No. 1148008.072
 Client/owner City of Yek Exploration Operator _____
 Logged by SNS Exploration Completed 10/27/17
 Ground Surface Conditions Flt. wood chips
 Weather Conditions cloudy, ~40°F

Location Sketch (show dimensions to mapped features) 
 North Arrow

Sample Depth (top) (ft.)	Sample Length (ft.)	Sample Number	(Other Test Data) <u>PN2</u>	USCS Symbol	Depth Scale (ft)	Groundwater seepage: none <input checked="" type="radio"/> slow moderate rapid @ _____ feet	Coordinates: (East) "x" _____ (North) "y" _____ Method _____ Elevations _____ Datum _____
Sample Description Color, secondary soil type, PRIMARY SOIL TYPE with modifiers and minor components (density/consistency, moisture)(geologic unit)						100ft Length of Test Pit (ft.) (View Direction) <u>E</u> <u>80ft</u> <u>100</u>	
					0	<u>Brn wood chips (loose, damp) - 22/23</u>	
				<u>SP</u>		<u>Gr. f-c SAND w/ cobbles (loose, damp) - 22/23</u>	<u>MSW construction debris, trash / lumber</u>
							<u>8.5A</u>

Total Depth 8.5 ft Finish Date 10/27/17 Hour 1100
 Comments/Field Notes: _____

Figure F-73

MSW - TP - 3

Exploration No. 3

Date 10/27/17 Hour 1315



Log of Test Pit

Project Name Yok Landfill Project No. 1148008.010 Location Sketch (show dimensions to mapped features) 

Client/owner C. of Yok Exploration Operator _____

Logged by SDJ Exploration Completed 10/27/17

Ground Surface Conditions flat, wood chips

Weather Conditions _____

Groundwater seepage: none slow moderate rapid
@ _____ feet

Coordinates: (East) "x" _____ (North) "y" _____ Method _____

Elevations _____ Datum _____

Sample Depth (top) (ft.)	Sample Length (ft.)	Sample Number	USCS Symbol	Depth Scale (ft)	Sample Description Color, secondary soil type, PRIMARY SOIL TYPE with modifiers and minor components (density/consistency, moisture)(geologic unit)
		<u>RIS</u> (Other Test Data)			
				0	45ft Length of Test Pit (ft.) (View Direction) <u>East</u> 35ft 45ft
			<u>WD</u>		<u>Ben wood chips (fresh, dry)</u> <u>10/27/17</u>
			<u>SP</u>		<u>Gay fine SAND w/ cobbles (class, deq)</u> <u>10/27/17</u>
					<u>MSW</u> <u>-constructed debris, rebar, plastic</u>
					<u>8ft</u>

Total Depth 8ft Finish Date 10/27/17 Hour 1315

Comments/Field Notes: _____



MSW-TP-7
4
Exploration No. 4
Date 10/27/17 Hour 1415

Log of Test Pit

Project Name <u>Yck. Landfill</u> Project No. <u>1148008.010</u> Client/owner <u>C. of Yck</u> Exploration Operator _____ Logged by <u>SDJ</u> Exploration Completed <u>10/27/17</u> Ground Surface Conditions <u>Flat, wood chips</u> Weather Conditions <u>cloudy, ~45°F</u>	Location Sketch (show dimensions to mapped features) North Arrow
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------

Sample Depth (top) (ft.)	Sample Length (ft.)	Sample Number	(Other Test Data)	USCS Symbol	Depth Scale (ft)	Groundwater seepage: none slow moderate rapid @ _____ feet	Coordinates: (East) "x" _____ (North) "y" _____ Method _____	Elevations _____ Datum _____
						Sample Description Color, secondary soil type, PRIMARY SOIL TYPE with modifiers and minor components (density/consistency, moisture)(geologic unit)		
						Length of Test Pit (ft.) (View Direction) <u>EAST</u> <u>85ft</u>		
					0	pm Wood chips (loose, dry) ~10/72		
		0.0		WP				
				SP		G-FC SAND w/ cobbles (loose, dry) ~10/72 MSW - construction debris, concrete, rebar, stumps, plastic		
		0.0						

Total Depth 8ft Finish Date 10/27/17 Hour 1500
 Comments/Field Notes: _____

MSW-TR-5

Exploration No. 5
Date 10/28/17 Hour 730



Log of Test Pit

Project Name Yek Landfill Project No. 1198028-70
 Client/owner C. of Yek Exploration Operator _____
 Logged by SDJ Exploration Completed 10/28/17
 Ground Surface Conditions flat, wood chips
 Weather Conditions cloudy, ~40°F

Location Sketch (show dimensions to mapped features) 
 North Arrow

Groundwater seepage: none slow moderate rapid
 Coordinates: (East) "x" _____ (North) "y" _____ Method _____
 Elevations _____ Datum _____

Sample Depth (top) (ft.)	Sample Length (ft.)	Sample Number	(Other Test Data)	USCS Symbol	Depth Scale (ft)	Sample Description Color, secondary soil type, PRIMARY SOIL TYPE with modifiers and minor components (density/consistency, moisture)(geologic unit)
					0	<p>70 ft Length of Test Pit (ft.) (View Direction) <u>EAST</u> 50 ft</p> <p>Wood chips (loose, dry)</p> <p>6-8 f-c SAND w cobbles (loose, dry)</p> <p>MSW - plastic bottles, ropes, ribbon (5/6 in)</p> <p>7 ft</p>
				WD		
				SP		

Total Depth 7 ft Finish Date 10/28/17 Hour 0800
 Comments/Field Notes: _____

Figure F-76

MSW-TV-6

Exploration No. 6

Date 10/28/17 Hour 0830



Log of Test Pit

Project Name Yukino Landfill Project No. 148008.010

Client/owner City of Yukino Exploration Operator _____

Logged by SPS Exploration Completed 10/28/17

Ground Surface Conditions flat, wood chips

Weather Conditions cloudy, ~40°F

Location Sketch (show dimensions to mapped features)



Groundwater seepage: none slow moderate rapid

Coordinates: (East) "x" _____ (North) "y" _____ Method _____

Elevations _____ Datum _____

Sample Depth (top) (ft.)	Sample Length (ft.)	Sample Number	(Other Test Data)	USCS Symbol	Depth Scale (ft)
					0
				WD	
				S	
					6ft
					8ft

Sample Description
Color, secondary soil type, PRIMARY SOIL TYPE with modifiers and minor components (density/consistency, moisture)(geologic unit)

Length of Test Pit (ft.) (View Direction) NORTH
12ft

Wood chips (loose, dry)

Gg, fine SAND w/ cobbles (loose, damp)

MSW = plastic paper, metal shavings, rubbish

Total Depth 8ft Finish Date 10/28/17 Hour 0900

Comments/Field Notes: _____

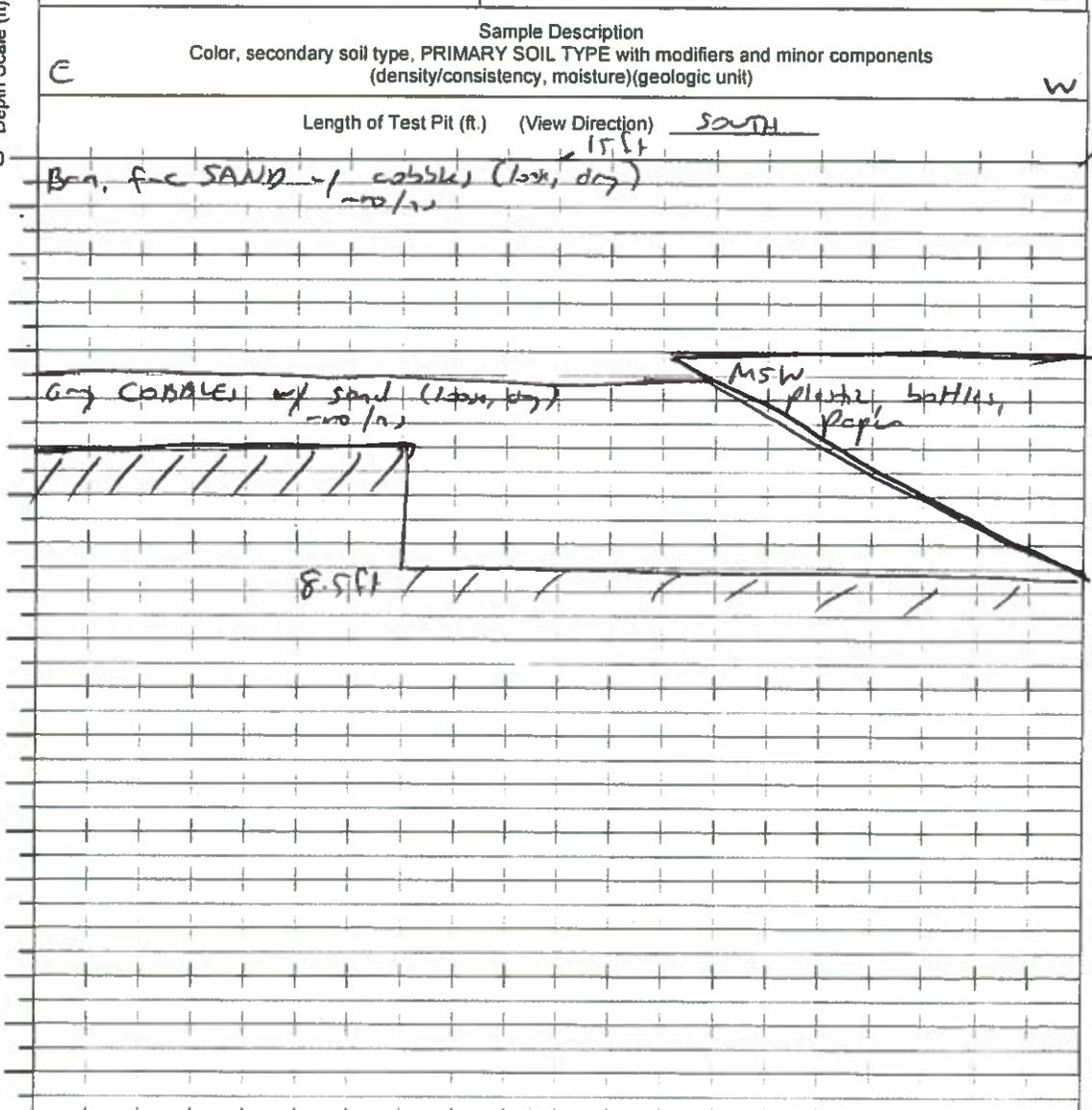
Figure F-77

MSW-TP-9

Exploration No. 9
Date 10/28/17 Hour 1030



Log of Test Pit

Project Name <u>Yekno Landfill</u> Project No. <u>1148008.012</u>				Location Sketch (show dimensions to mapped features) 	
Client/owner <u>City of Yekno</u> Exploration Operator _____					
Logged by <u>SJS</u> Exploration Completed <u>10/28/17</u>					
Ground Surface Conditions <u>flat, gravel</u>					
Weather Conditions <u>cloudy, -42°F</u>					
Sample Depth (top) (ft.)	Sample Length (ft.)	Sample Number <u>P10</u> (Other Test Data)	USCS Symbol	Groundwater seepage: <u>none</u> slow moderate rapid @ _____ feet	
				Coordinates: (East) "x" _____ (North) "y" _____ Method _____ Elevations _____ Datum _____	
Sample Description Color, secondary soil type, PRIMARY SOIL TYPE with modifiers and minor components (density/consistency, moisture)(geologic unit)					
Length of Test Pit (ft.) (View Direction) <u>south</u> W					
0 <u>Ben. fine SAND - 1 cobbles (lost, dry)</u> 35					
0.0					
0.0 <u>gray COBBLES w/ sand (lost, dry)</u> MSW plastic, 50HAs, paper					
					

Total Depth 8.5 ft Finish Date 10/28/17 Hour 1130 1100
Comments/Field Notes: _____



MSL-TP-11

Exploration No. 11
Date 10/28/17 Hour 1130

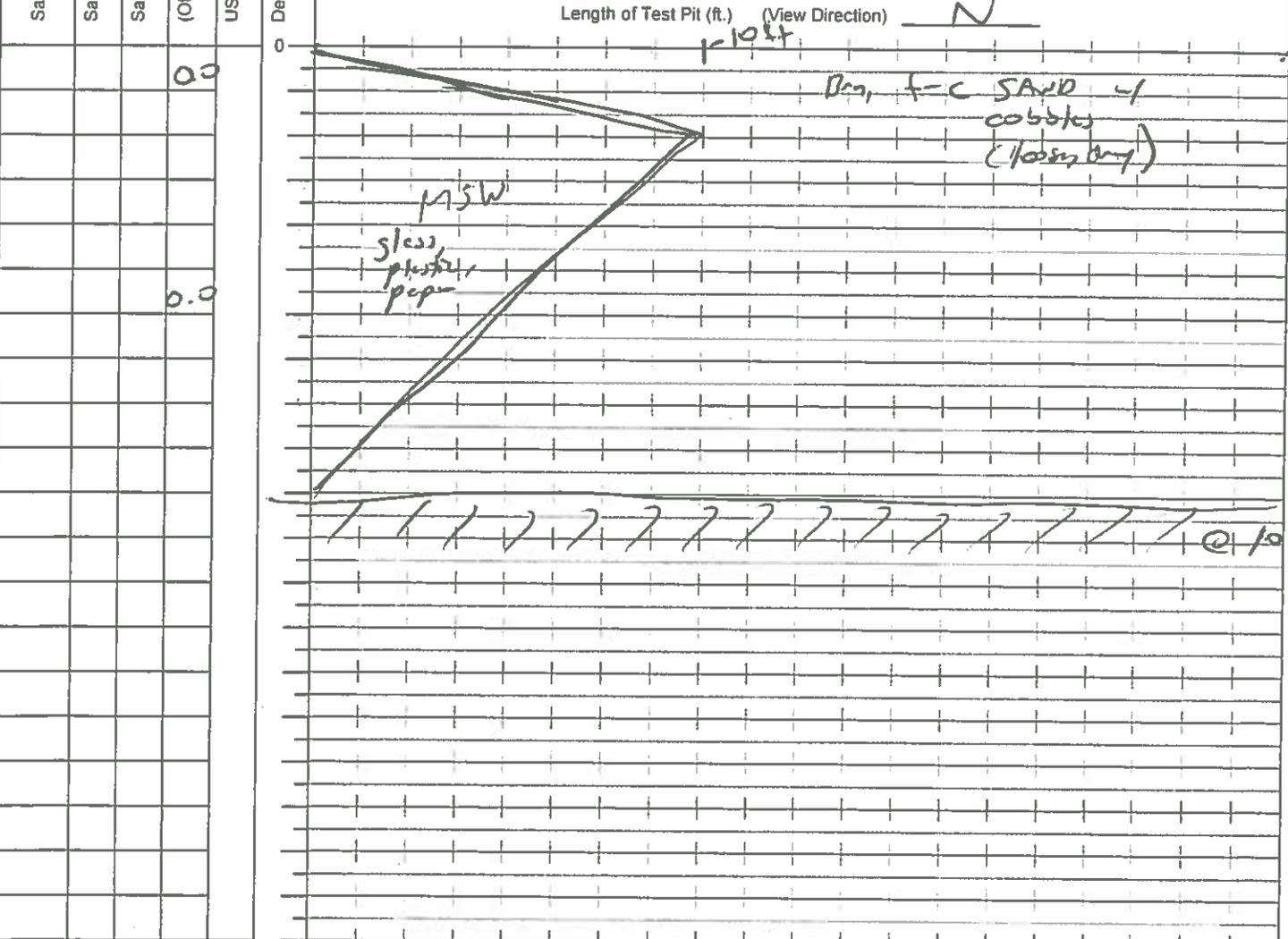
Log of Test Pit

Project Name Yekins Landfill Project No. 1148008.020
 Client/owner City of Yekins Exploration Operator _____
 Logged by SDJ Exploration Completed 10/28/17
 Ground Surface Conditions flk, gravel
 Weather Conditions cloudy, ~40°F

Location Sketch (show dimensions to mapped features) 
 North Arrow

Groundwater seepage: none slow moderate rapid
 @ _____ feet
 Coordinates: (East) "x" _____ (North) "y" _____ Method _____
 Elevations _____ Datum _____

Sample Description
 Color, secondary soil type, PRIMARY SOIL TYPE with modifiers and minor components
 (density/consistency, moisture)(geologic unit)



Total Depth 10 Finish Date 10/28/17 Hour 1200
 Comments/Field Notes: _____

MSW-TP-12

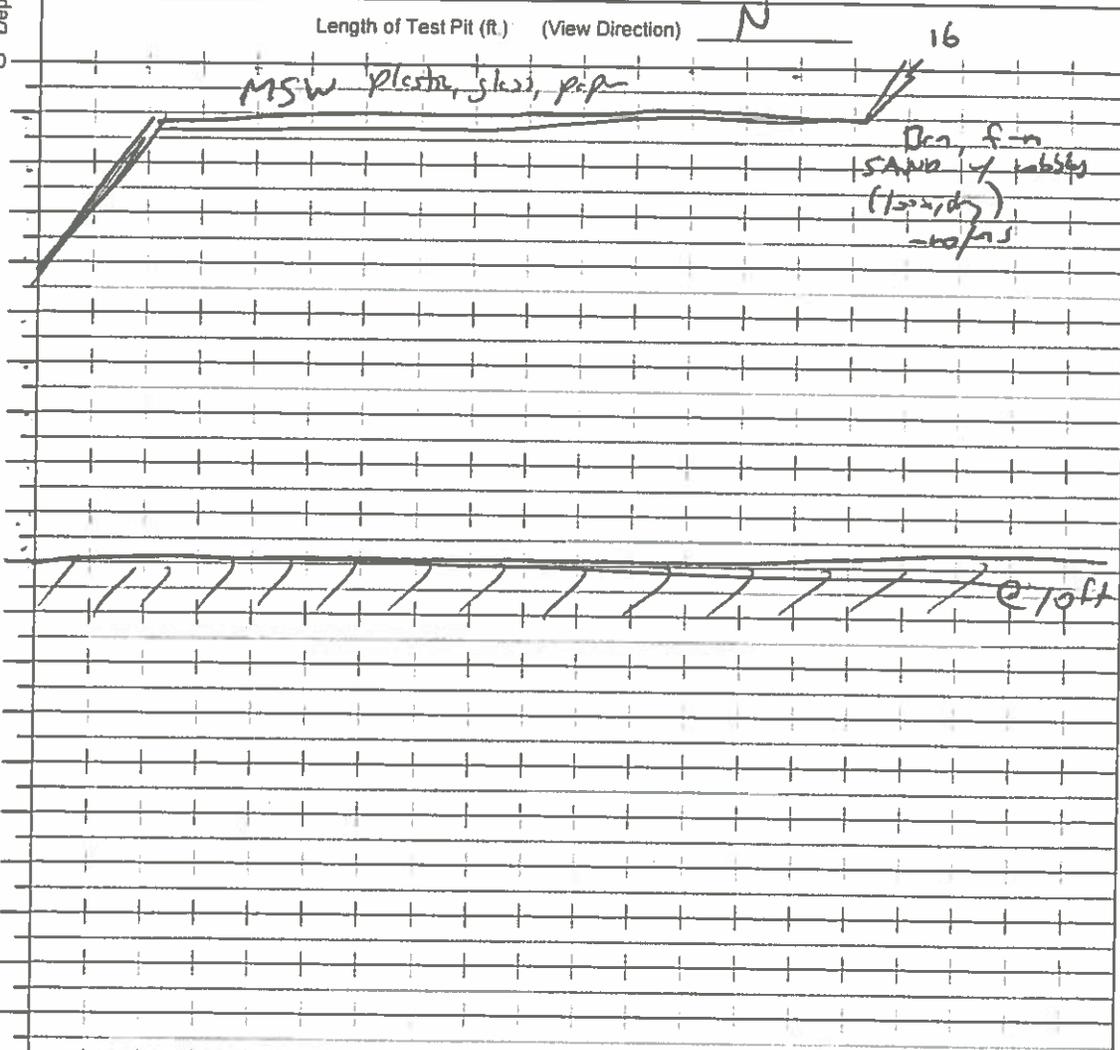
Exploration No. 12
Date 10/28/17 Hour 1200



Log of Test Pit

Project Name Yakins Landfill Project No. 1148008.012
 Client/owner City of Yakima Exploration Operator _____
 Logged by SDJ Exploration Completed 10/28/17
 Ground Surface Conditions flat, gravel
 Weather Conditions cloudy, ~70°F

Location Sketch (show dimensions to mapped features) 
 North Arrow

Sample Depth (top) (ft.)	Sample Length (ft.)	Sample Number	Other Test Data <u>PA2</u>	USCS Symbol	Depth Scale (ft.)	Groundwater seepage: <input checked="" type="radio"/> none <input type="radio"/> slow <input type="radio"/> moderate <input type="radio"/> rapid @ _____ feet	Coordinates: (East) "x" _____ (North) "y" _____ Method _____
						Elevations _____ Datum _____	
Sample Description Color, secondary soil type, PRIMARY SOIL TYPE with modifiers and minor components (density/consistency, moisture)(geologic unit)						Length of Test Pit (ft.) (View Direction) <u>N</u> <u>16</u> <u>20</u>	
							

Total Depth 10 Finish Date 10/28/17 Hour 1300
 Comments/Field Notes: _____

MSL-TP-17

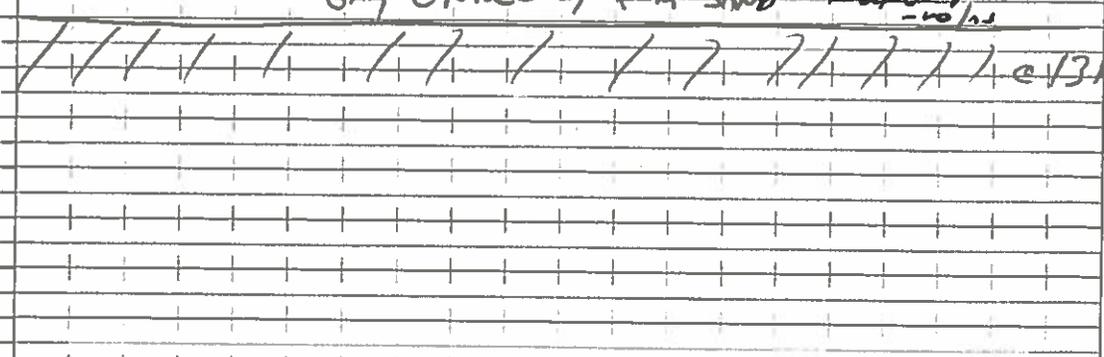
Exploration No. 17
Date 10/20/17 Hour 1230



Log of Test Pit

Project Name Yukima Mill Project No. 1178008.010
 Client/owner City of Yukima Exploration Operator _____
 Logged by SOS Exploration Completed 10/20/17
 Ground Surface Conditions sloped, gravel
 Weather Conditions cloudy, ~90°F

Location Sketch (show dimensions to mapped features) 
 North Arrow

Sample Depth (top) (ft.)	Sample Length (ft.)	Sample Number	(Other Test Data) <u>PH</u>	USCS Symbol	Depth Scale (ft)	Groundwater seepage: <input checked="" type="radio"/> none <input type="radio"/> slow <input type="radio"/> moderate <input type="radio"/> rapid @ _____ feet	Coordinates: (East) "x" _____ (North) "y" _____ Method _____
						Elevations _____ Datum _____	
Sample Description Color, secondary soil type, PRIMARY SOIL TYPE with modifiers and minor components (density/consistency, moisture)(geologic unit)						Length of Test Pit (ft.) (View Direction) <u>N 20 ft</u>	
			<u>0.0</u>		0	<u>Dr. f-m SAND w/ cobbles (loc. det.)</u> <u>-100% dry</u> <u>-10/20</u>	
			<u>0.0</u>			<u>Gr. f-m SAND w/ gravel</u> <u>-100% dry</u> <u>-10/20</u>	
						<u>MSL sloped gravel</u> <u>plate</u>	
						<u>Gr. GRAVEL w/ f-m SAND</u> <u>-100% dry</u> <u>-10/20</u>	
							

Total Depth 13 Finish Date 10/20/17 Hour 1350
 Comments/Field Notes: _____

MJL-TP-15

Exploration No. 15

Date 10/24/14 Hour 1350

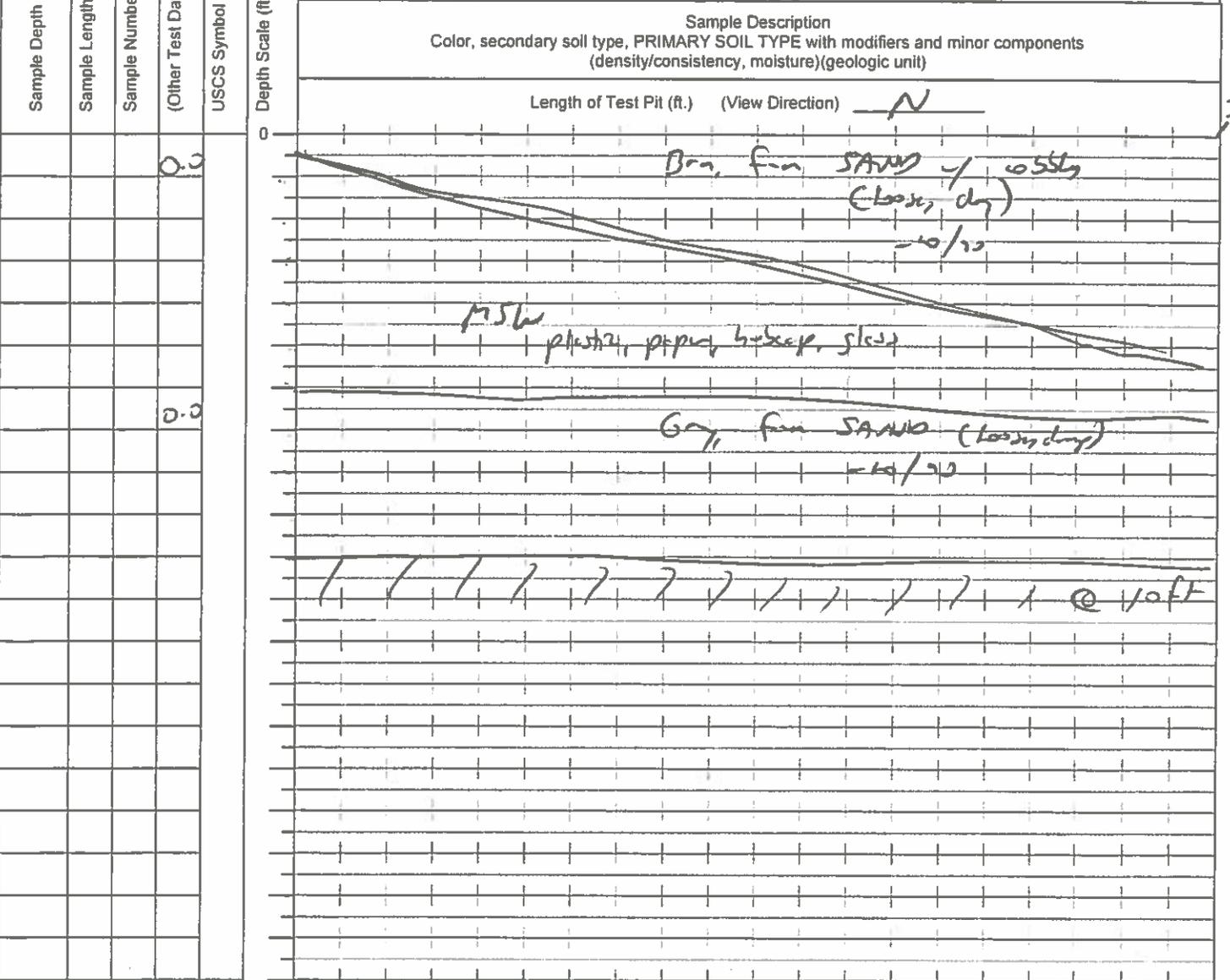


Log of Test Pit

Project Name Yekine Landfill Project No. 1146008.00
 Client/owner City of Yekim Exploration Operator _____
 Logged by SDJ Exploration Completed 10/24/14
 Ground Surface Conditions clay, gravel
 Weather Conditions cloudy ~40°F

Location Sketch (show dimensions to mapped features) 
 North Arrow

Groundwater seepage: none slow moderate rapid @ _____ feet
 Coordinates: (East) "x" _____ (North) "y" _____ Method _____
 Elevations _____ Datum _____



Total Depth 10 Finish Date 10/24/14 Hour 1440
 Comments/Field Notes: _____

Landfill Gas/Soil Vapor Probe Logs

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** GP-1
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 25, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 15.0
COORDINATES _____ **INITIAL WATER LEVEL** ▽
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

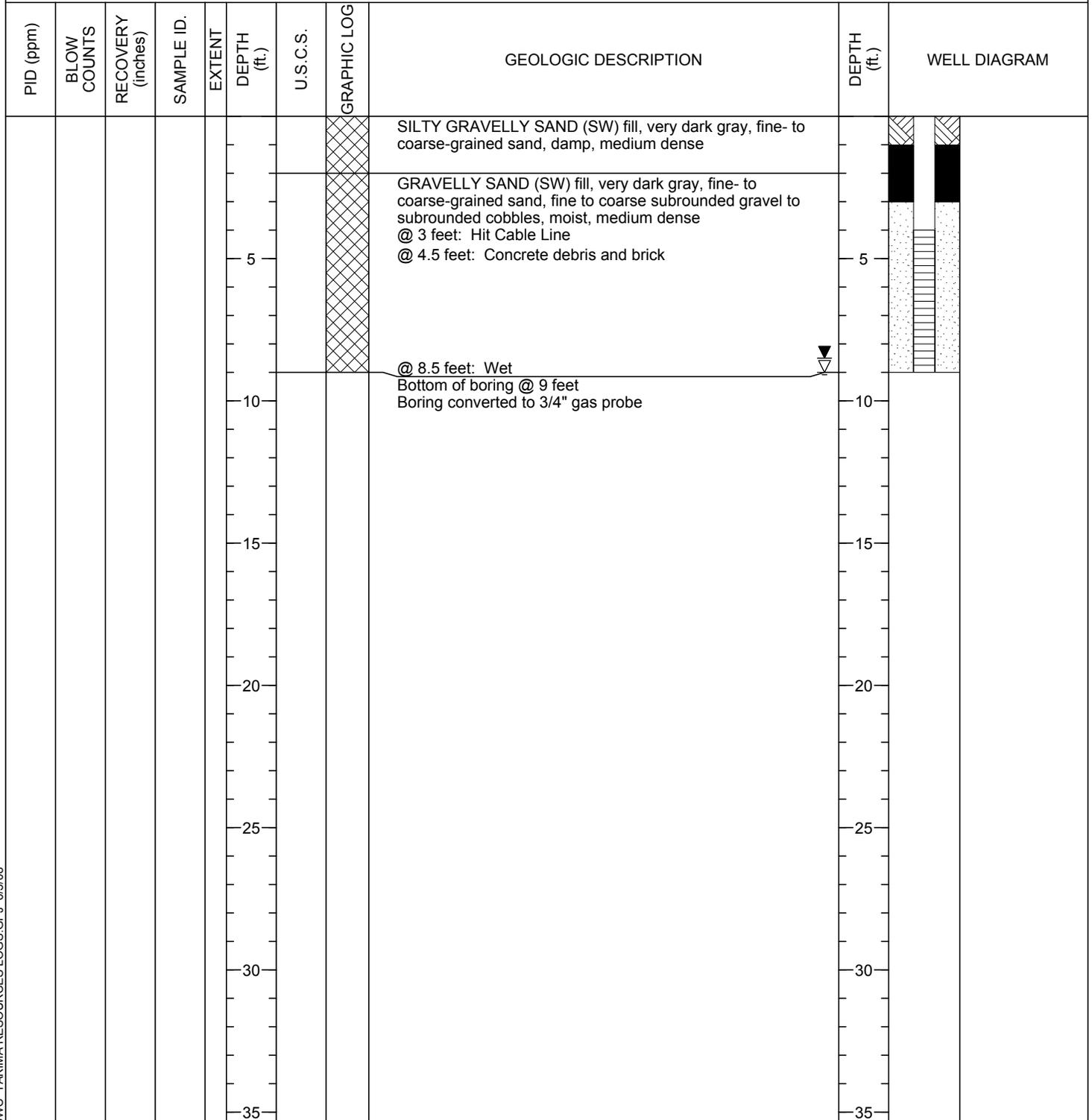
PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
					0			WOOD DEBRIS fill, grayish brown, bark with silt, dry, loose	0	
					5			SILTY SAND (SM) with cobbles and wood debris fill, dark gray, fine- to medium-grained sand, moist (capillary saturation), medium dense	5	
					7			SANDY SILT (ML) fill, dark gray, medium plasticity, fine-grained micaceous sand, wet, medium stiff	7	
					8			WOOD DEBRIS fill, red, possible pond settle out, pinches out to the north	8	
					10	GP		SILTY SAND COBBLES (GP), dark gray, fine- to medium-grained sand, trace fine subrounded gravel, moist, dense	10	
					15			Bottom of boring @ 15 feet Boring converted to 3/4" gas probe	15	
					20				20	
					25				25	
					30				30	
					35				35	

BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08

Figure G-1

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** GP-2
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** February 26, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 9.0
COORDINATES _____ **INITIAL WATER LEVEL** ▽ 9.0
DRILLING METHOD Backhoe **STATIC WATER LEVEL** ▽ 8.5
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____



BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 555-5753-001 **BORING/WELL NUMBER** GP-3
PROJECT NAME Former Boise Cascade Mill Site **DATE COMPLETED** March 3, 2008
LOCATION Yakima, WA **TOTAL DEPTH OF BORING** 15.0
COORDINATES _____ **INITIAL WATER LEVEL** ▽ 12.0
DRILLING METHOD Sonic **STATIC WATER LEVEL** ▽
SAMPLING METHOD _____ **LOGGED BY** Deutsch/Saul
GROUND ELEVATION _____ **TOP OF CASING ELEVATION** _____

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft.)	U.S.C.S.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	DEPTH (ft.)	WELL DIAGRAM
								ASPHALT		
						GW		SILTY SANDY GRAVEL (GW), dark gray, 40% fine to coarse gravel, 35% fine- to coarse-grained sand, 25% silt, damp, dense		
					5	SM		SILTY SAND (SM), dark gray, fine- to coarse-grained sand, moist, dense	5	
			GRAB GP-3-12	G						
					15			Bottom of boring @ 15 feet Boring converted to 3/4" gas probe	15	
					20				20	
					25				25	
					30				30	
					35				35	

BWC YAKIMA RESOURCES LOGS.GPJ 6/5/08



22122 20th Avenue SE
Bothell, Washington 98021
Telephone: 425.402.8800
SLR International Corp Fax: 425.402.8488

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/17/09 COMPLETED 2/17/09 GROUND ELEVATION 1063.52 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 7.5 ft / Elev 1056.0 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0									
2.5								SILTY GRAVEL, dark gray, fine to coarse, some fines, little sand, rounded, moist, some wood waste.	<p>Concrete</p> <p>Hydrated bentonite chips</p> <p>1"-diameter Sch. 40 PVC blank riser</p> <p>2x12 Colorado silica sand pack</p> <p>1"-diameter Sch. 40 PVC 0.020"-slotted screen</p> <p>End cap</p>
5.0							2.0 to 8.0 feet: No wood waste.		
7.5		D&M		15	21		5.0 to 8.0 feet: Little fine- to coarse-grained medium-dense sand.		
8.0		D&M		0	13		∇ @ 7.5 feet: Becomes wet.		

Boring completed at 8.0 feet.

SOIL VAPOR PROBE COMPLETION DETAILS:

- +3.3 to 0 feet: 1"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
- 0 to 4 feet: 1"-diameter Sch. 40 PVC blank riser.
- 4 to 7.8 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 7.8 to 7.9 feet: 1"-diameter Sch. 40 PVC end cap.
- 0 to 2 feet: Concrete.
- 2 to 3.5 feet: Hydrated bentonite chips.
- 3.5 to 8 feet: 2x12 Colorado silica sand.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ_GINT US.GDT_3/25/09

Figure G-4



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PROBE NUMBER GP-5

PAGE 1 OF 2

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/17/09 COMPLETED 2/17/09 GROUND ELEVATION 1063.51 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING 17.0 ft / Elev 1046.5 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0									
2.5						SM		SILTY SAND, dark brown, some silt, little fine to medium well-rounded gravel, moist, organic, wood waste.	Concrete
	D&M			60	21			@ 3.0 feet: Becomes light olive brown, fine-grained, medium-dense sand, no gravel.	Hydrated bentonite chips
4.5									1059.0
5.0						ML		SANDY SILT, olive gray, some fine-grained sand, trace organics, 1/2" lenses of brown organics, stiff.	
	D&M		GP5-S1	100	11			@ 7.0 feet: Becomes moist to wet and grades to SILTY SAND.	1"-diameter Sch. 40 PVC blank riser
7.5									
	D&M		GP5-S2	80	39			SANDY GRAVEL, olive gray, fine to coarse, rounded to well-rounded, some medium- to coarse-grained sand, dense, damp.	2x12 Colorado silica sand pack
8.0									1055.5
	D&M		GP5-S3	45	53	GW		@ 12.5 feet: Broken cobble in sampler, no recovery.	1"-diameter Sch. 40 PVC
10.0									
	D&M			20	50/6"				
12.5									

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.

(Continued Next Page)

Figure G-5 (Page 1 of 2)

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/25/09



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
15.0						GW		SANDY GRAVEL, olive gray, fine to coarse, rounded to well-rounded, some medium- to coarse-grained sand, dense, damp. (continued)	<p>0.020"-slotted screen End cap</p>
		D&M	GP5-S4	90	11	SP		SAND, olive gray, medium-grained, trace coarse-grained sand, trace fine gravel, loose, moist.	
17.5						GW		SANDY GRAVEL, light olive brown, fine to coarse, well-rounded, some fine- to coarse-grained sand, very dense, moist. @ 17.0 feet: Becomes wet. @ 17.5 feet: Broken cobble in sampler, no recovery.	
		D&M		90	50/6"				

Boring completed at 18.0 feet.

SOIL VAPOR PROBE COMPLETION DETAILS:

- +3.1 to 0 feet: 1"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
- 0 to 9.7 feet: 1"-diameter Sch. 40 PVC blank riser.
- 9.7 to 14.2 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 14.2 to 14.5 feet: 1"-diameter Sch. 40 PVC end cap.

- 0 to 2 feet: Concrete.
- 2 to 9 feet: Hydrated bentonite chips.
- 9 to 18 feet: 2x12 Colorado silica sand.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US_GDT 3/25/09

Figure G-5 (Page 2 of 2)



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/13/09 COMPLETED 2/18/09 GROUND ELEVATION 1058.30 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 13.0 ft / Elev 1045.3 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0									
0.5								WOOD WASTE.	
0.5								1057.8	
2.5		D&M	GP6-S1	33	6			SAND, brown, fine-grained, little fine gravel, loose, damp.	Concrete
2.5		D&M	GP6-S2	33	9				Hydrated bentonite chips
5.0		D&M	GP6-S3	25	6	SP		@ 4.5 feet: Gravel becomes fine to medium, few cobbles up to 2"-diameter.	1"-diameter Sch. 40 PVC blank riser
5.0		D&M	GP6-S4	33	11				
6.0								1052.3	
6.0		D&M	GP6-S5	70	7			SILTY SAND, dark brown, fine-grained, moist, loose, some wood.	
7.5		D&M	GP6-S6	100	8	SM			2x12 Colorado silica sand pack
10.0		D&M	GP6-S7	100	31				1"-diameter Sch. 40 PVC 0.020"-slotted screen
10.0		D&M	GP6-S8	50	37	SP		SAND, gray, fine-grained, medium-dense, moist.	End cap
11.0								@ 11.0 feet: Becomes medium- to coarse-grained sand, some fine to coarse gravel, few cobbles up to 3"-diameter.	
12.5									Hydrated bentonite chips
13.0								∇ @ 13.0 feet: Becomes wet, broken cobble in sampler,	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

(Continued Next Page)

Figure G-6 (Page 1 of 2)

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/25/09



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
						SP		no recovery. SAND, gray, fine-grained, medium-dense, moist. (continued)	Native slough

14.0 1044.3
 Boring completed at 14.0 feet.

SOIL VAPOR PROBE COMPLETION DETAILS:

- +3.1 to 0 feet: 1"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
- 0 to 6.8 feet: 1"-diameter Sch. 40 PVC blank riser.
- 6.8 to 11.6 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 11.6 to 11.9 feet: 1"-diameter Sch. 40 PVC end cap.
- 0 to 2 feet: Concrete.
- 2 to 5.5 feet: Hydrated bentonite chips.
- 5.5 to 12.5 feet: 2x12 Colorado silica sand.
- 12.5 to 13 feet: Hydrated bentonite chips.
- 13 to 14 feet: Native slough.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR.GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/25/09

Figure G-6 (Page 2 of 2)



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/18/09 COMPLETED 2/18/09 GROUND ELEVATION 1045.54 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 7.0 ft / Elev 1038.5 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0									
1.0								WOOD WASTE, dark brown, little medium to coarse rounded gravel, moist.	
2.5								SANDY GRAVEL, brown, fine to coarse, some fine-to coarse-grained sand, little silt, very dense, moist.	
2.5	X	D&M	GP7-S1	50	50/6"				Concrete
5.0	X	D&M		50	50/2"	GW			Hydrated bentonite chips
7.5	X	D&M							1"-diameter Sch. 40 PVC blank riser
7.5									2x12 Colorado silica sand pack
8.5									1"-diameter Sch. 40 PVC 0.020"-slotted screen
									End cap
									Native slough

∇ @ 6.5 feet: Becomes olive gray.
 ∇ @ 7.0 feet: Becomes wet.
 @ 7.5 feet: Orange-brown staining, trace silt, broken cobble in sampler.

Boring completed at 8.5 feet.

SOIL VAPOR PROBE COMPLETION DETAILS:

- +3 to 0 feet: 1"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
- 0 to 3.6 feet: 1"-diameter Sch. 40 PVC blank riser.
- 3.6 to 6 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 6 to 6.2 feet: 1"-diameter Sch. 40 PVC end cap.
- 0 to 2 feet: Concrete.
- 2 to 3 feet: Hydrated bentonite chips.
- 3 to 7.5 feet: 2x12 Colorado silica sand.
- 7.5 to 8.5 feet: Native slough.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ_GINT US.GDT 3/25/09

Figure G-7



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/18/09 COMPLETED 2/18/09 GROUND ELEVATION 1046.98 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 8.1 ft / Elev 1038.9 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0								WOOD WASTE, little medium to coarse gravel, dry to moist.	
1.5							SANDY GRAVEL, brown, fine to coarse, some fine-to coarse-grained sand, few fines, medium-dense, moist.		
2.5		D&M	GP8-S1	66	37				
5.0		D&M			50/0"	GW	@ 5.0 feet: No recovery, cuttings indicate sandy gravel.		
7.5		D&M		10	36		@ 7.5 feet: Broken cobble in sampler.		
9.0							∇ @ 8.1 feet: Becomes wet.		

Boring completed at 9.0 feet.

SOIL VAPOR PROBE COMPLETION DETAILS:

- +2.8 to 0 feet: 1"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
- 0 to 4 feet: 1"-diameter Sch. 40 PVC blank riser.
- 4 to 6.5 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 6.5 to 6.6 feet: 1"-diameter Sch. 40 PVC end cap.
- 0 to 2 feet: Concrete.
- 2 to 3 feet: Hydrated bentonite chips.
- 3 to 9 feet: 2x12 Colorado silica sand.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/25/09

Figure G-8



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/18/09 COMPLETED 2/18/09 GROUND ELEVATION 1048.09 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 7.0 ft / Elev 1041.1 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0								WOOD WASTE , bark mulch, little medium to coarse gravel, dry to moist.	
1.5							GRAVELLY SAND , brown, medium- to coarse-grained, fine to medium gravel, medium-dense, damp.		
2.5		D&M	GP9-S1	75	22	SP			
4.5							SANDY GRAVEL , brown, fine to coarse, well-rounded to flattened, medium- to coarse-grained sand, very dense, damp, cobble in sampler.		
5.0		D&M		90	50/6"			@ 6.0 feet: Grades to olive gray.	
7.5						GW		∇ @ 7.0 feet: Becomes wet.	
8.0		D&M		90	50/6"			Boring completed at 8.0 feet.	

SOIL VAPOR PROBE COMPLETION DETAILS:

- +3 to 0 feet: 1"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
- 0 to 4.2 feet: 1"-diameter Sch. 40 PVC blank riser.
- 4.2 to 6.8 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 6.8 to 6.9 feet: 1"-diameter Sch. 40 PVC end cap.

- 0 to 2 feet: Concrete.
- 2 to 3 feet: Hydrated bentonite chips.
- 3 to 7.5 feet: 2x12 silica sand.
- 7.5 to 8 feet: Native slough.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/13/09

Figure G-9

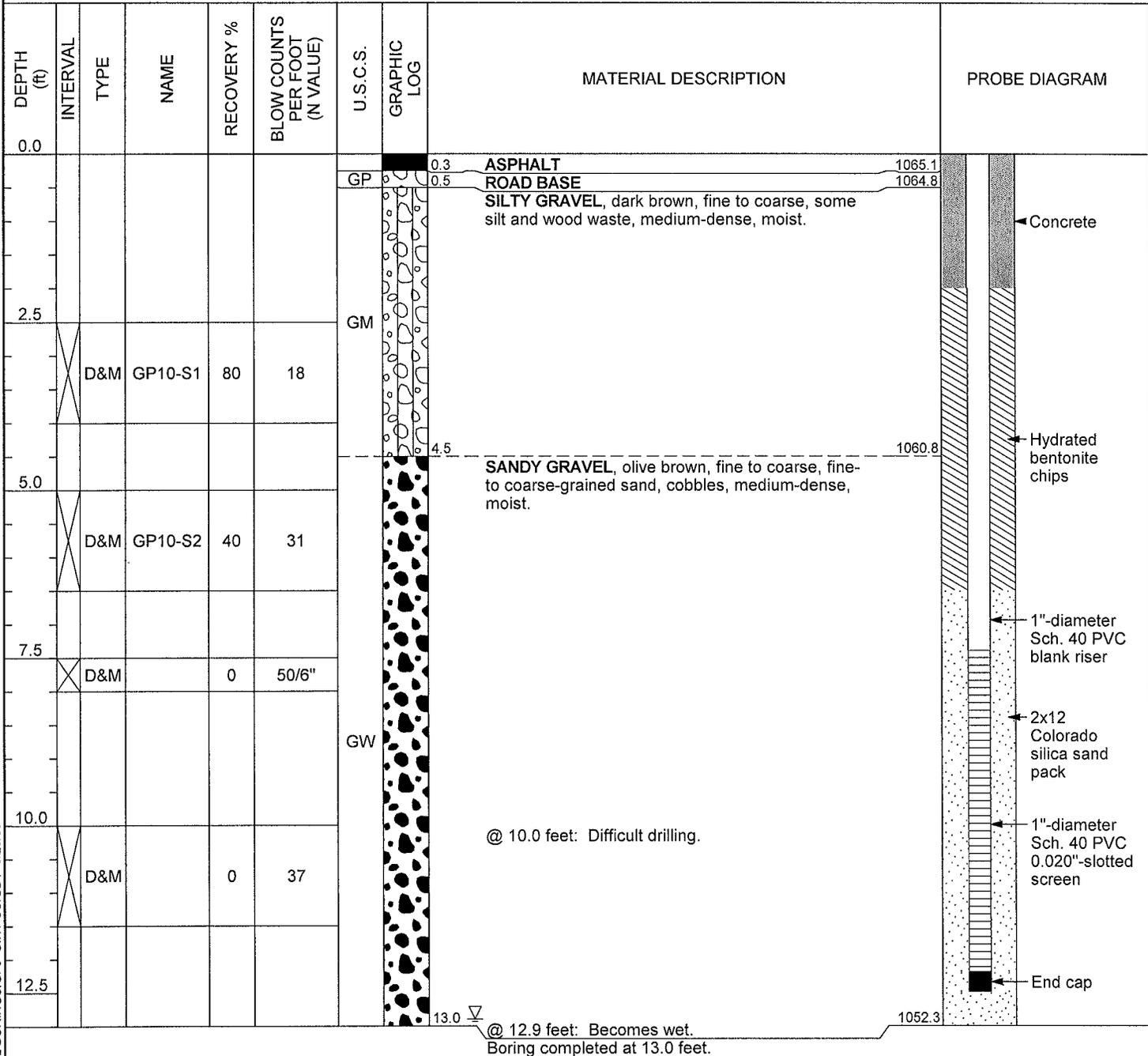


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PROBE NUMBER GP-10

PAGE 1 OF 2

CLIENT <u>City of Yakima</u>	PROJECT NAME <u>Former City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>2/18/09</u> COMPLETED <u>2/18/09</u>	GROUND ELEVATION <u>1065.30 ft</u> HOLE SIZE <u>8.5" Diameter</u>
DRILLING CONTRACTOR <u>Cascade Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	∇ AT TIME OF DRILLING <u>12.9 ft / Elev 1052.4 ft</u>
LOGGED BY <u>B. Robinson</u> CHECKED BY _____	AT END OF <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>



REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

(Continued Next Page)

Figure G-10 (Page 1 of 2)

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/25/09



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
---------------	----------	------	------	------------	--------------------------------------	----------	----------------	----------------------	---------------

SOIL VAPOR PROBE COMPLETION DETAILS:

+3 to 0 feet: 1"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
 0 to 7.4 feet: 1"-diameter Sch. 40 PVC blank riser.
 7.4 to 12.2 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
 12.2 to 12.5 feet: 1"-diameter Sch. 40 PVC end cap.

0 to 2 feet: Concrete.
 2 to 6.5 feet: Hydrated bentonite chips.
 6.5 to 13 feet: 2x12 Colorado silica sand.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US_GDT 3/25/09



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/19/09 COMPLETED 2/19/09 GROUND ELEVATION 1065.58 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0								WOOD WASTE, bark mulch, some silty sand, little gravel.	
2.5									
4.0								SILTY SAND, fine- to coarse-grained, some silt, little fine to coarse well-rounded gravel, few wood waste, medium dense, moist.	Concrete
5.0						SM			Hydrated bentonite chips
7.5		D&M		90	22				1"-diameter Sch. 40 PVC blank riser
8.5								WOOD WASTE, reddish brown, bark mulch and wood chips, moist.	
10.0									2x12 Colorado silica sand pack
12.5		D&M		80	38				1"-diameter Sch. 40 PVC

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

(Continued Next Page)

Figure G-11 (Page 1 of 2)

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/25/09



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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
15.0								WOOD WASTE , reddish brown, bark mulch and wood chips, moist. <i>(continued)</i>	 0.020"-slotted screen End cap
	X	D&M			50/5"			@ 15.0 feet: Piece of wood caught in sampler, no recovery, moist. Boring completed at 15.5 feet.	

SOIL VAPOR PROBE COMPLETION DETAILS:

- +2.8 to 0 feet: 1"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
- 0 to 10.3 feet: 1"-diameter Sch. 40 PVC blank riser.
- 10.3 to 15 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 15 to 15.4 feet: 1"-diameter Sch. 40 PVC end cap.

- 0 to 2 feet: Concrete.
- 2 to 9 feet: Hydrated bentonite chips.
- 9 to 15.5 feet: 2x12 Colorado silica sand.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/25/09

Figure G-11 (Page 2 of 2)



22122 20th Avenue SE
 Bothell, Washington 98021
 Telephone: 425.402.8800
 SLR International Corp Fax: 425.402.8488

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/19/09 COMPLETED 2/19/09 GROUND ELEVATION 1062.34 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 17.5 ft / Elev 1044.8 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0								WOOD WASTE, bark mulch, moist.	<p>Concrete</p> <p>Hydrated bentonite chips</p> <p>1"-diameter Sch. 40 PVC blank riser</p> <p>2x12 Colorado silica sand pack</p> <p>1"-diameter Sch. 40 PVC</p>
2.5		D&M	GP12-S1	90	39				
3.0							1059.3	SILTY SAND, olive gray, fine- to coarse-grained, little fine to coarse rounded gravel, medium-dense, moist.	
5.0		D&M	GP12-S2	80	25			5.0 to 10.0 feet: Little wood waste.	
7.5		D&M		5	10	SP-SM			
10.0		D&M		40	18			@ 10.0 feet: Becomes dark olive brown, some wood waste, cobble caught in sampler.	
12.5		D&M		0	18			@ 12.5 feet: No recovery. Cuttings indicate silty sand with some gravel.	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

(Continued Next Page)

Figure G-12 (Page 1 of 2)

SLR GP LOG - YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/13/09



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
15.0						SP-SM		SILTY SAND , olive gray, fine- to coarse-grained, little fine to coarse rounded gravel, medium-dense, moist. <i>(continued)</i> @ 17.0 feet: Becomes olive gray, fine-grained, moist to wet, trace organics. @ 17.5 feet: Becomes wet.	
	D&M		5	36					
17.5									
	D&M	GP12-S3	100	38					

Boring completed at 19.5 feet, sandy gravel in end of sampler shoe.

SOIL VAPOR PROBE COMPLETION DETAILS:

- +3.1 to 0 feet: 1"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
- 0 to 10.9 feet: 1"-diameter Sch. 40 PVC blank riser.
- 10.9 to 15.7 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 15.7 to 16.0 feet: 1"-diameter Sch. 40 PVC end cap.
- 0 to 2 feet: Concrete.
- 2 to 10 feet: Hydrated bentonite chips.
- 10 to 18.5 feet: 2x12 Colorado silica sand.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/13/09

Figure G-12 (Page 2 of 2)



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CLIENT <u>City of Yakima</u>	PROJECT NAME <u>Former City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>2/23/09</u> COMPLETED <u>2/23/09</u>	GROUND ELEVATION <u>1062.49 ft</u> HOLE SIZE <u>8.5" Diameter</u>
DRILLING CONTRACTOR <u>Cascade Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	AT TIME OF DRILLING <u>Dry</u>
LOGGED BY <u>C. Lee</u> CHECKED BY _____	AT END OF ---
NOTES _____	AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0								WOOD WASTE, some gravelly sand, little silt.	
2.5									
3.0		D&M	GP13-S1	100	10	SP	GRAVELLY SAND, gray, fine- to medium-grained, fine to coarse gravel, loose, moist.		
4.5							WOOD WASTE, trace fine gravel, moist.		
5.0									
7.5									
10.0		D&M	GP13-S3	10	17				

Boring completed at 10.0 feet.

SOIL VAPOR PROBE COMPLETION DETAILS:

- +2.9 to 0 feet: 1"-diameter Sch. 40 PVC blank riser encased in an 8"-diameter protective steel monument set in concrete with three protective concrete-filled steel bollards.
- 0 to 4.2 feet: 1"-diameter Sch. 40 PVC blank riser.
- 4.2 to 9 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 9 to 9.3 feet: 1"-diameter Sch. 40 PVC end cap.

- 0 to 1 foot: Concrete.
- 1 to 3 feet: Hydrated bentonite chips.
- 3 to 10 feet: 2x12 Colorado silica sand.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/25/09

Figure G-13



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PROBE NUMBER GP-14

CLIENT City of Yakima **PROJECT NAME** Former City of Yakima Landfill
PROJECT NUMBER 001.0221.00004 **PROJECT LOCATION** Yakima, Washington
DATE STARTED 4/16/09 **COMPLETED** 4/16/09 **GROUND ELEVATION** _____ **HOLE SIZE** 8.5" Diameter
DRILLING CONTRACTOR Cascade Drilling **GROUND WATER LEVELS:**
DRILLING METHOD Hollow Stem Auger **AT TIME OF DRILLING** 13.5 ft
LOGGED BY C. Lee **CHECKED BY** _____ **AT END OF** ---
NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0									
2.5		D&M		80	20	ML		SANDY SILT , brown, low plasticity, little fine-grained sand, very stiff, damp, trace roots.	Concrete Hydrated bentonite chips
5.0		D&M		25	17	GP		SANDY GRAVEL , gray, medium to coarse, little brown fine-grained sand, loose, damp.	1"-diameter Sch. 40 PVC blank riser
7.5		D&M		25	17	GP			2x12 Colorado silica sand pack
10.0		D&M		50	18	SP		GRAVELLY SAND , brown, fine-grained, some fine gravel, little fractured cobbles, medium-dense, damp.	
12.5		D&M		75	27	GP		SANDY GRAVEL , gray, coarse, fractured, little fine-grained sand, trace fine gravel, medium-dense, damp to moist.	1"-diameter Sch. 40 PVC 0.020"-slotted screen

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

▽ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/23/09



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
12.5									
								SANDY GRAVEL , gray, coarse, fractured, little fine-grained sand, trace fine gravel, medium-dense, damp to moist. <i>(continued)</i>	<p>End cap</p> <p>Native slough.</p>
								@ 13.5 feet: Little fine gravel, few fine-grained sand, trace brown silt, wet.	
15.0		D&M		50	31	GP			

15.5

Boring completed at 15.5 feet.

SOIL VAPOR PROBE COMPLETION DETAILS:

- 0 to 3.1 feet: 1"-diameter Sch. 40 PVC blank riser.
- 3.1 to 12.9 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 12.9 to 13.2 feet: 1"-diameter Sch. 40 PVC end cap.
- 0 to 1 foot: Concrete.
- 1 to 2.5 feet: Hydrated bentonite chips.
- 3 to 14 feet: 2x12 Colorado silica sand.
- 14 to 15.5 feet: Native slough.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/23/09

Figure G-14 (Page 2 of 2)



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PROBE NUMBER GP-15

PAGE 1 OF 2

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 4/16/09 COMPLETED 4/16/09 GROUND ELEVATION _____ HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING 13.5 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0									
2.5		D&M		30	23	SP		SAND, brown, fine-grained, few fine to medium gravel, few fractured cobbles, medium-dense, damp, trace roots.	Concrete Hydrated bentonite chips 1"-diameter Sch. 40 PVC blank riser
5.0		D&M		50	24	GP		GRAVEL, gray, medium to coarse, subangular to subrounded, trace fine gravel, trace fine-grained brown sand, medium-dense, damp.	
7.5		D&M		50	50/6"	GP		SANDY GRAVEL, gray, coarse, subangular to subrounded, some fractured cobbles, little fine-grained sand, very dense, damp.	2x12 Colorado silica sand pack
8.0		D&M		50	50/6"	GP		GRAVEL, gray, coarse, subrounded, very dense, damp.	
10.5						GP		SANDY GRAVEL, gray, coarse, subrounded, some fractured cobbles, little fine-grained sand, very dense, moist.	1"-diameter Sch. 40 PVC 0.020"-slotted screen
12.5		D&M			72	GP			

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT U.S.GDT 4/23/09

(Continued Next Page)

Figure G-15 (Page 1 of 2)



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PROBE NUMBER GP-16

PAGE 1 OF 2

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 4/16/09 COMPLETED 4/16/09 GROUND ELEVATION _____ HOLE SIZE 8.5" Diameter
 DRILLING DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 13.5 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0									
2.5		D&M		100	34	GM		SILTY GRAVEL, gray, coarse, subrounded, little brown silt, few fine gravel, few fine-grained sand, medium-dense, moist.	Concrete Hydrated bentonite chips 1"-diameter Sch. 40 PVC blank riser
3.5		D&M		0	50/2"			GRAVEL, gray, coarse, some cobbles, few fine-grained sand, very dense, damp.	
5.0		D&M		0	50/6"	GP			2x12 Colorado silica sand pack
7.5		D&M		10	50/6"				
10.0		D&M		80	50/6"	GP		SANDY GRAVEL, gray, coarse, subangular, some fractured cobbles, little fine- to medium-grained sand, dry.	1"-diameter Sch. 40 PVC 0.020"-slotted screen
12.5		D&M							

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/23/09

(Continued Next Page)

Figure G-16 (Page 1 of 2)



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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
12.5									
						GP		SANDY GRAVEL , gray, coarse, subangular, some fractured cobbles, little fine- to medium-grained sand, dry. (continued)	
						SW		GRAVELLY SAND , brown, fine- to coarse-grained, little medium to coarse gravel, little fractured cobbles, trace silt, wet.	
15.0		D&M		50	18				

Boring completed at 15.5 feet.

SOIL VAPOR PROBE COMPLETION DETAILS:

- 0 to 3.2 feet: 1"-diameter Sch. 40 PVC blank riser.
- 3.2 to 13 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 13 to 13.3 feet: 1"-diameter Sch. 40 PVC end cap.
- 0 to 1 foot: Concrete.
- 1 to 2.5 feet: Hydrated bentonite chips.
- 3 to 14 feet: 2x12 Colorado silica sand.
- 14 to 15.5 feet: Native slough.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT U.S.GDT 4/23/09

Figure G-16 (Page 2 of 2)



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PROBE NUMBER GP-17

PAGE 1 OF 2

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 4/17/09 COMPLETED 4/17/09 GROUND ELEVATION _____ HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 14.5 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0									
2.5		D&M		80	23	GM		SILTY GRAVEL , gray, coarse, subangular to subrounded, some fractured cobbles, some brown silt, trace fine- to medium-grained sand, medium-dense, moist.	Concrete Hydrated bentonite chips 1"-diameter Sch. 40 PVC blank riser
5.0		D&M		100	50/6"	GP		GRAVEL , gray, coarse, subangular to subrounded, some fractured cobbles, few fine- to medium-grained brown sand, trace silt, very dense, damp. @ 5.5 feet: No silt.	2x12 Colorado silica sand pack
7.5		D&M		70	50/6"	GP		SANDY GRAVEL , gray, medium to coarse, subrounded to rounded, some fractured cobbles, little fine- to medium-grained brown sand, medium-dense, damp.	
10.0		D&M		50	31	GP		GRAVEL , gray, coarse, subrounded to rounded, some fractured cobbles, very dense, damp.	1"-diameter Sch. 40 PVC 0.020"-slotted screen
12.5		D&M		100	50/5"	GP			

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/23/09

(Continued Next Page)

Figure G-17 (Page 1 of 2)



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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
12.5									
15.0		D&M		50	36	GP		GRAVEL, gray, coarse, subrounded to rounded, some fractured cobbles, very dense, damp. <i>(continued)</i> @ 13.0 feet: Few fine- to medium-grained sand. @ 14.5 feet: Becomes wet.	End cap
Boring completed at 15.0 feet.									

SOIL VAPOR PROBE COMPLETION DETAILS:

- 0 to 3.2 feet: 1"-diameter Sch. 40 PVC blank riser.
- 3.2 to 13 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 13 to 13.3 feet: 1"-diameter Sch. 40 PVC end cap.

- 0 to 1 foot: Concrete.
- 1 to 2.5 feet: Hydrated bentonite chips.
- 3 to 15 feet: 2x12 Colorado silica sand.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

Water level at time of drilling.

SLR.GP.LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/23/09

Figure G-17 (Page 2 of 2)



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PROBE NUMBER GP-18

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 4/17/09 COMPLETED 4/17/09 GROUND ELEVATION _____ HOLE SIZE 8.5" Diameter
 DRILLING DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING ---
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0									
2.5		D&M		0	26			GRAVEL, gray, coarse, some cobbles up to 8"-diameter, little fine-grained sand, damp. @ 1.5 feet: No recovery.	Concrete Hydrated bentonite chips
5.0		D&M		25	16	GP		@ 3.5 feet: Medium to coarse gravel, little fractured cobbles, trace fine- to medium-grained sand, loose.	1"-diameter Sch. 40 PVC blank riser
7.5		D&M		10	71			@ 6.5 feet: Some fractured cobbles, few fine- to medium-grained sand, very dense, dry.	2x12 Colorado silica sand pack
11.0									1"-diameter Sch. 40 PVC 0.020"-slotted screen
12.5		D&M		80	51	GP		SANDY GRAVEL, gray, coarse, some fractured cobbles, little brown fine- to medium-grained sand, medium-dense, damp.	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
 Did not encounter water in boring.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/23/09



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PROBE NUMBER GP-19

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CLIENT City of Yakima **PROJECT NAME** Former City of Yakima Landfill
PROJECT NUMBER 001.0221.00006 **PROJECT LOCATION** Yakima, Washington
DATE STARTED 11/4/09 **COMPLETED** 11/4/09 **GROUND ELEVATION** 1060.71 ft **HOLE SIZE** 8.5" Diameter
DRILLING CONTRACTOR Cascade Drilling **GROUND WATER LEVELS:**
DRILLING METHOD Hollow Stem Auger **AT TIME OF DRILLING** 14.5 ft / Elev 1046.2 ft
LOGGED BY C. Lee **CHECKED BY** _____ **AT END OF** ---
NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0									
0.5						WW	[Cross-hatched pattern]	WOOD WASTE, sawdust, bark, ash.	
2.0					SM	[Cross-hatched pattern]	SILTY SAND, dark reddish-brown, fine-grained, little fines, few fine gravel, very moist.		
2.5		D&M		30	30		MUNICIPAL SOLID WASTE, medium dense, moist. @ 2.5 feet: Paper, wood, glass.		
5.0		D&M		60	22		@ 5 feet: Fiber, wood, soil/decomposable (50% by volume).		
7.5		D&M		60	18	MSW	[Cross-hatched pattern]	@ 7.5 feet: Paper, plastic, soil/decomposable (20% by volume).	
10.0		D&M		50	19			@ 10 feet: Paper, plastic, fiber, soil/decomposable (10% by volume).	
12.5									

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

(Continued Next Page)

Figure G-19 (Page 1 of 2)

SLR.GP.LOG YAKIMA SOIL BORINGS.GPJ GINT U.S.GDT 11/19/09



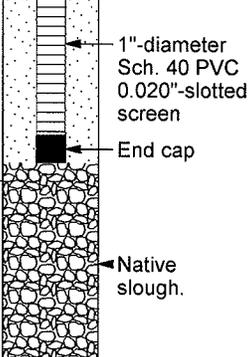
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 SLR International Corp Fax: 425.402.8488

CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00006

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
12.5									
		D&M		70	10	MSW		MUNICIPAL SOLID WASTE , medium dense, moist. <i>(continued)</i> @ 12.5 feet: Wood, plastic, glass, soil/decomposable (25% by volume).	
15.0									
		D&M		70	62	SM		14.5 ▽ SILTY SAND , gray, fine-grained, little fines, very dense, wet.	1046.2
									1044.2

Boring completed at 16.5 feet.

SOIL VAPOR PROBE COMPLETION DETAILS:

- +3 to 9.2 feet: 1"-diameter Sch. 40 PVC blank riser.
- 9.2 to 14 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 14 to 14.3 feet: 1"-diameter Sch. 40 PVC end cap.
- 0 to 1.5 feet: Concrete.
- 1.5 to 7 feet: Hydrated bentonite chips.
- 7 to 14.3 feet: 2x12 Colorado silica sand.
- 14.3 to 16.5 feet: Native slough.

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

▽ Water level at time of drilling.

SLR GP LOG - YAKIMA SOIL BORINGS.GPJ GINT US.GDT 11/19/09

Figure G-19 (Page 2 of 2)



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CLIENT City of Yakima **PROJECT NAME** Former City of Yakima Landfill
PROJECT NUMBER 001.0221.00006 **PROJECT LOCATION** Yakima, Washington
DATE STARTED 11/3/09 **COMPLETED** 11/3/09 **GROUND ELEVATION** 1057.16 ft **HOLE SIZE** 8.5" Diameter
DRILLING CONTRACTOR Cascade Drilling **GROUND WATER LEVELS:**
DRILLING METHOD Hollow Stem Auger **AT TIME OF DRILLING** 14.0 ft / Elev 1043.2 ft
LOGGED BY C. Lee **CHECKED BY** _____ **AT END OF** ---
NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0									
0.5						WW	[Cross-hatched pattern]	WOOD WASTE, sawdust, bark, ash, very moist.	
2.5		D&M		30	24	GP	[Cross-hatched pattern]	SANDY GRAVEL, reddish brown, medium- to coarse-grained, little fine- to coarse-grained sand, few fines, medium dense, very moist.	Concrete
4.5						SM	[Cross-hatched pattern]	SILTY SAND, dark brown, fine-grained, little fines, medium dense, very moist to moist.	Hydrated bentonite chips
7.5		D&M		50	23	MSW	[Cross-hatched pattern]	MUNICIPAL SOLID WASTE, medium dense. @ 7.5 feet: Metal, wood, glass, paper, soil/decomposable (50% by volume), moist.	1"-diameter Sch. 40 PVC blank riser
10.0		D&M		50	19			@ 10 feet: Wood, paper, plastic, fiber, soil/decomposable (20% by volume), moist.	2x12 Colorado silica sand pack
12.5									1"-diameter Sch. 40 PVC 0.020"-slotted screen

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

(Continued Next Page)

Figure G-20 (Page 1 of 2)

SLR.GP.LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 11/19/09



22122 20th Avenue SE
 Bothell, Washington 98021
 Telephone: 425.402.8800
 SLR International Corp Fax: 425.402.8488

CLIENT City of Yakima **PROJECT NAME** Former City of Yakima Landfill
PROJECT NUMBER 001.0221.00006 **PROJECT LOCATION** Yakima, Washington
DATE STARTED 11/5/09 **COMPLETED** 11/5/09 **GROUND ELEVATION** 1063.38 ft **HOLE SIZE** 8.5" Diameter
DRILLING CONTRACTOR Cascade Drilling **GROUND WATER LEVELS:**
DRILLING METHOD Hollow Stem Auger **AT TIME OF DRILLING** --
LOGGED BY C. Lee **CHECKED BY** _____ **AT END OF** ---
NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0									
2.5						WW		WOOD WASTE, wood chips, sawdust, damp.	Concrete
3.0		D&M		100	37	SM		SILTY SAND, dark gray, fine-grained, little fines, few fine gravel, dense, damp.	1060.4
4.0								MUNICIPAL SOLID WASTE, medium dense, moist to damp.	1059.4
5.0		D&M		100	24			@ 5 feet: Brick, wood, metal, soil/decomposable (20% by volume).	Hydrated bentonite chips
7.5		D&M		30	15	MSW		@ 7.5 feet: Plastic, metal, soil/decomposable (70% by volume).	1"-diameter Sch. 40 PVC blank riser
10.0		D&M		15	16			@ 10 feet: Ash, fiber, paper.	2x12 Colorado silica sand pack
12.5									

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

(Continued Next Page)

Figure G-21 (Page 1 of 2)

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 11/19/09



22122 20th Avenue SE
 Bothell, Washington 98021
 Telephone: 425.402.8800
 SLR International Corp Fax: 425.402.8488

CLIENT City of Yakima **PROJECT NAME** Former City of Yakima Landfill
PROJECT NUMBER 001.0221.00006 **PROJECT LOCATION** Yakima, Washington
DATE STARTED 11/2/09 **COMPLETED** 11/2/09 **GROUND ELEVATION** 1063.30 ft **HOLE SIZE** 8.5" Diameter
DRILLING CONTRACTOR Cascade Drilling **GROUND WATER LEVELS:**
DRILLING METHOD Hollow Stem Auger **AT TIME OF DRILLING** 13.0 ft / Elev 1050.3 ft
LOGGED BY C. Lee **CHECKED BY** _____ **AT END OF** ---
NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
0.0								WOOD WASTE, sawdust, trace fine gravel, damp to wet.	
2.5	X	D&M		100	50/4"		WW		Concrete
5.0	X	D&M		25	50/3"			@ 6.5 feet: Bark chips and sawdust.	Hydrated bentonite chips
7.5	X	D&M		0	50/5"			@ 7.5 feet: No recovery.	1"-diameter Sch. 40 PVC blank riser
10.0	X	D&M		100	21				2x12 Colorado silica sand pack
12.5									1"-diameter Sch. 40 PVC 0.020"-slotted screen

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

Water level at time of drilling.

(Continued Next Page)

Figure G-22 (Page 1 of 2)

SLR GP LOG YAKIMA SOIL BORINGS GPJ GINT US.GDT 11/19/09



22122 20th Avenue SE
Bothell, Washington 98021
Telephone: 425.402.8800
SLR International Corp Fax: 425.402.8488

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
PROJECT NUMBER 001.0221.00006 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PROBE DIAGRAM
12.5									
	X	D&M		100	28	WW		WOOD WASTE, sawdust, trace fine gravel, damp to ∇ wet. (continued) @ 13 feet: Becomes wet.	

Boring completed at 14.0 feet.

SOIL VAPOR PROBE COMPLETION DETAILS:

- +3.5 to 7.8 feet: 1"-diameter Sch. 40 PVC blank riser.
- 7.8 to 12.6 feet: 1"-diameter Sch. 40 PVC 0.020"-slotted screen.
- 12.6 to 12.9 feet: 1"-diameter Sch. 40 PVC end cap.
- 0 to 2 feet: Concrete.
- 2 to 6 feet: Hydrated bentonite chips.
- 6 to 13 feet: 2x12 Colorado silica sand.
- 13 to 14 feet: Native slough.

REMARKS

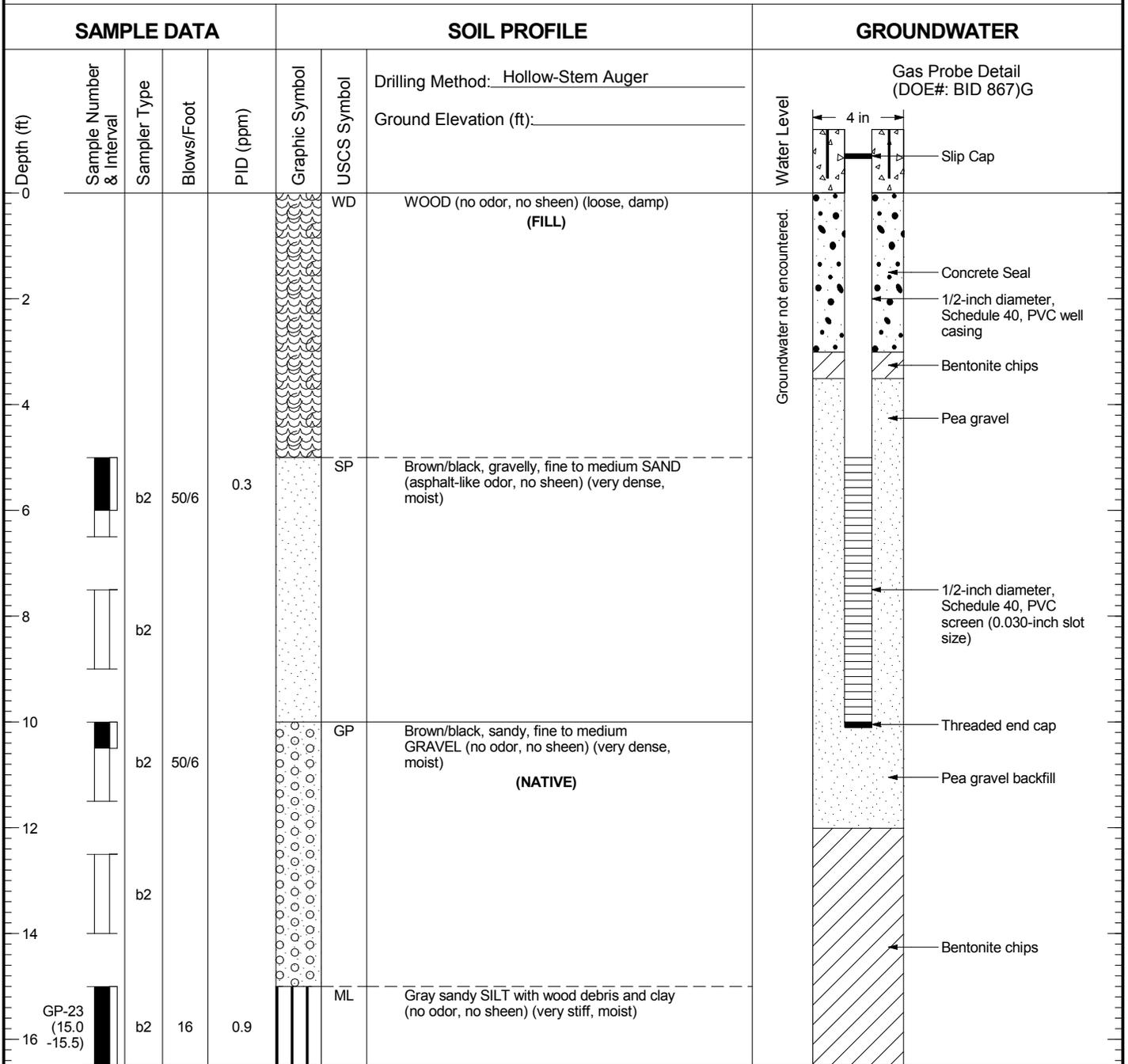
D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.

∇ Water level at time of drilling.

SLR GP LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 11/19/09

Figure G-22 (Page 2 of 2)

GP-23



Gas Probe Completed 10/31/14
Total Depth of Gas Probe = 10.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.020.022 3/11/15 N:\PROJECTS\1148008.020.022.GPJ WELL LOG



Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Gas Probe GP-23

Figure
G-23

GP-23A

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft) 0 2 4 6 8 10 12 14 16 18 20	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hollow-Stem Auger</u>	Water Level 4 in Detail G
					AC	ASPHALT	Ground Elevation (ft): _____	
	b2	13	0.6	GP	(ASPHALT)	Brown/black, sandy, fine to medium GRAVEL with wood debris (asphalt-like odor, no sheen) (medium dense, damp)	(FILL)	
	b2	44		SP	Brown, gravelly, fine to medium SAND with trace wood debris (no odor, no sheen) (medium dense to very dense, damp)			
	b2			DB	Rubber, plastic, metal DEBRIS (hydrogen sulfide like odor, no sheen) (medium dense to very dense, moist)	(MUNICIPAL SOILD WASTE)		

Boring Completed 10/30/14
Total Depth of Boring = 12.0 ft.

Completed 10/31/14

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.020.022 3/11/15 N:\PROJECTS\1148008.020.022.GPJ WELL LOG



Closed City of Yakima Landfill
Site
Yakima, Washington

Log of GP-23A

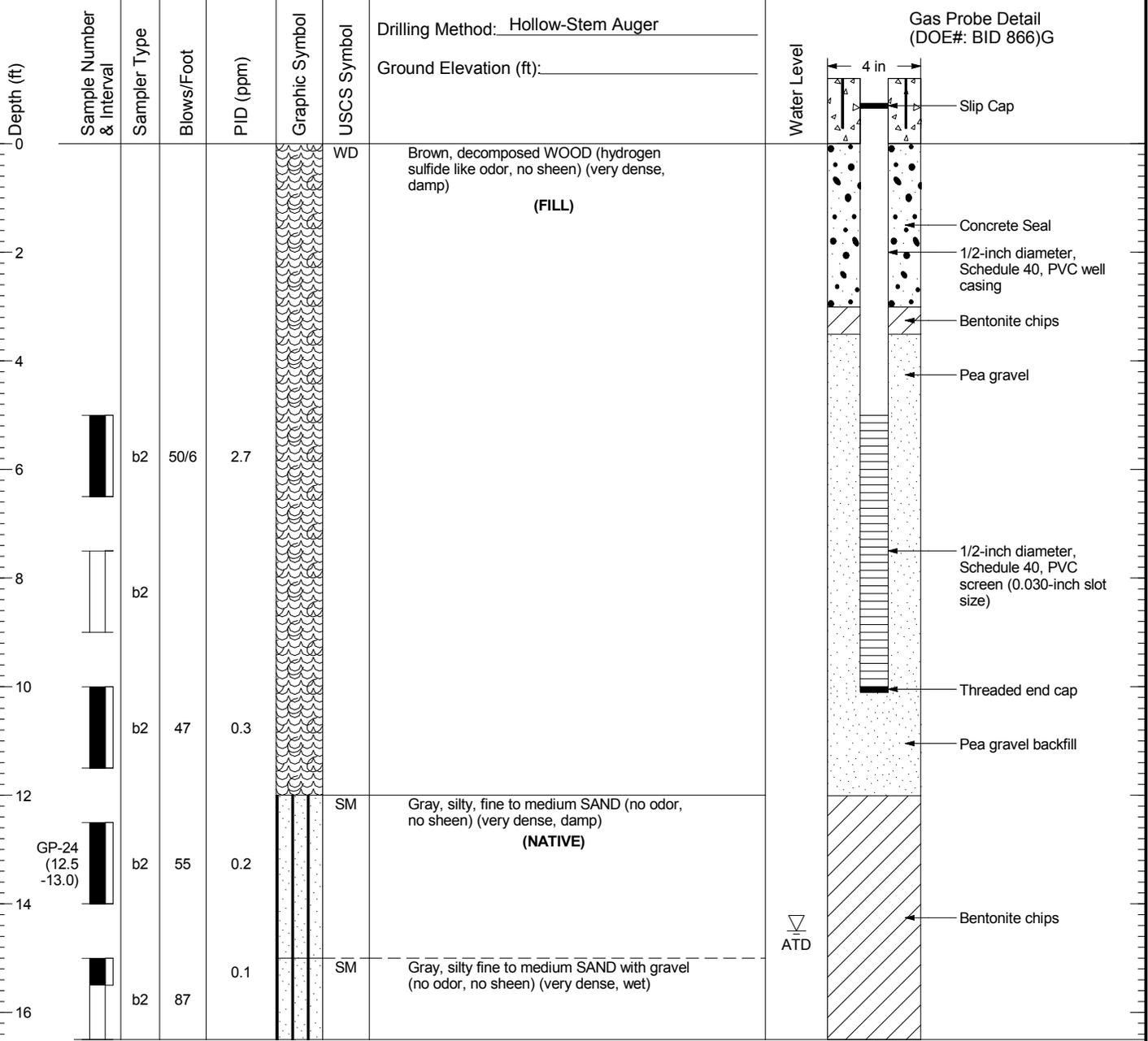
Figure
G-24

GP-24

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 10/30/14
Total Depth of Boring = 16.5 ft.

Gas Probe Completed 10/30/14
Total Depth of Gas Probe = 10.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.020.022 3/11/15 N:\PROJECTS\1148008.020.022.GPJ WELL LOG

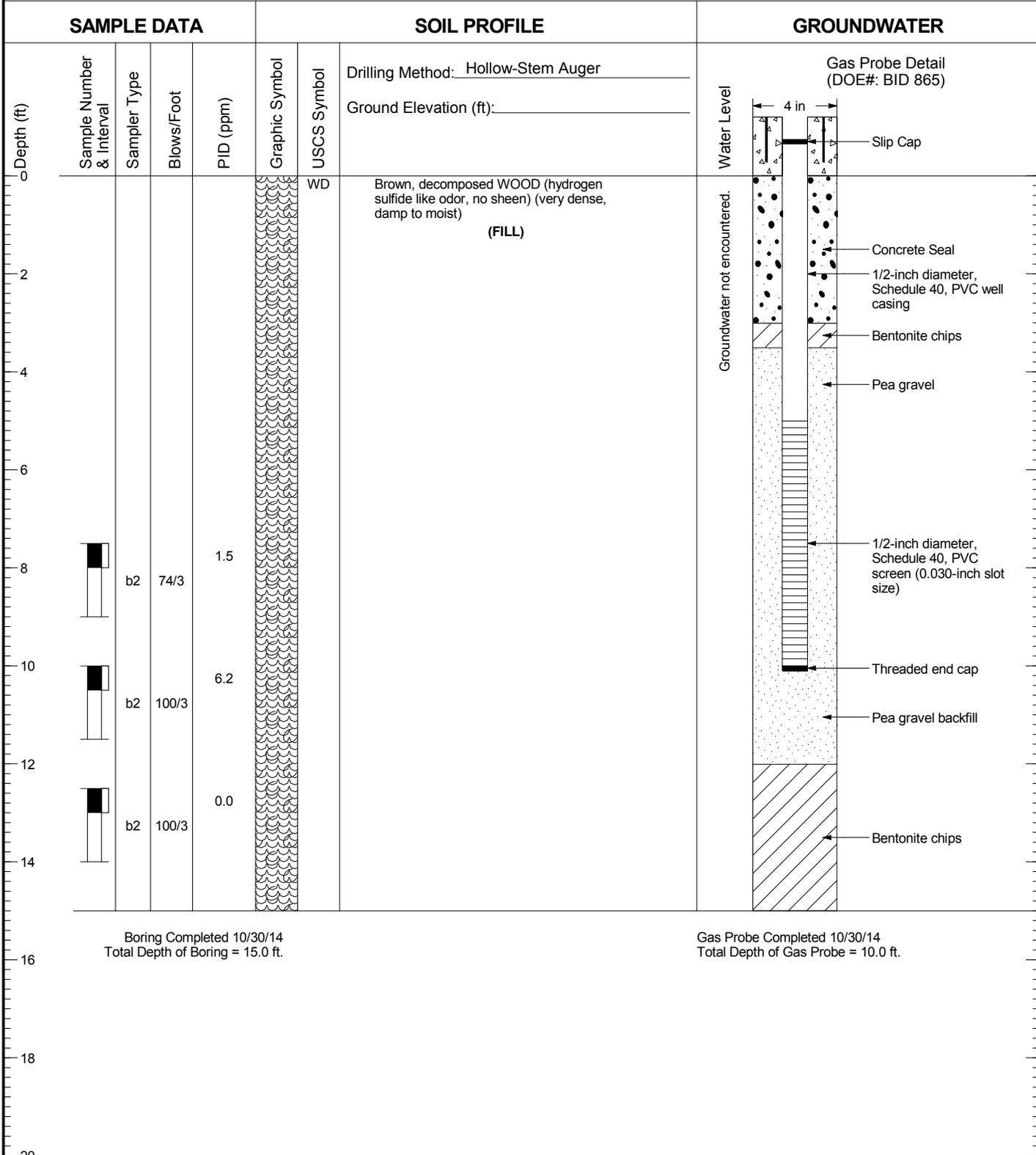


Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Gas Probe GP-24

Figure
G-25

GP-25



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.020.022 3/11/15 N:\PROJECTS\1148008.020.022.GPJ WELL LOG

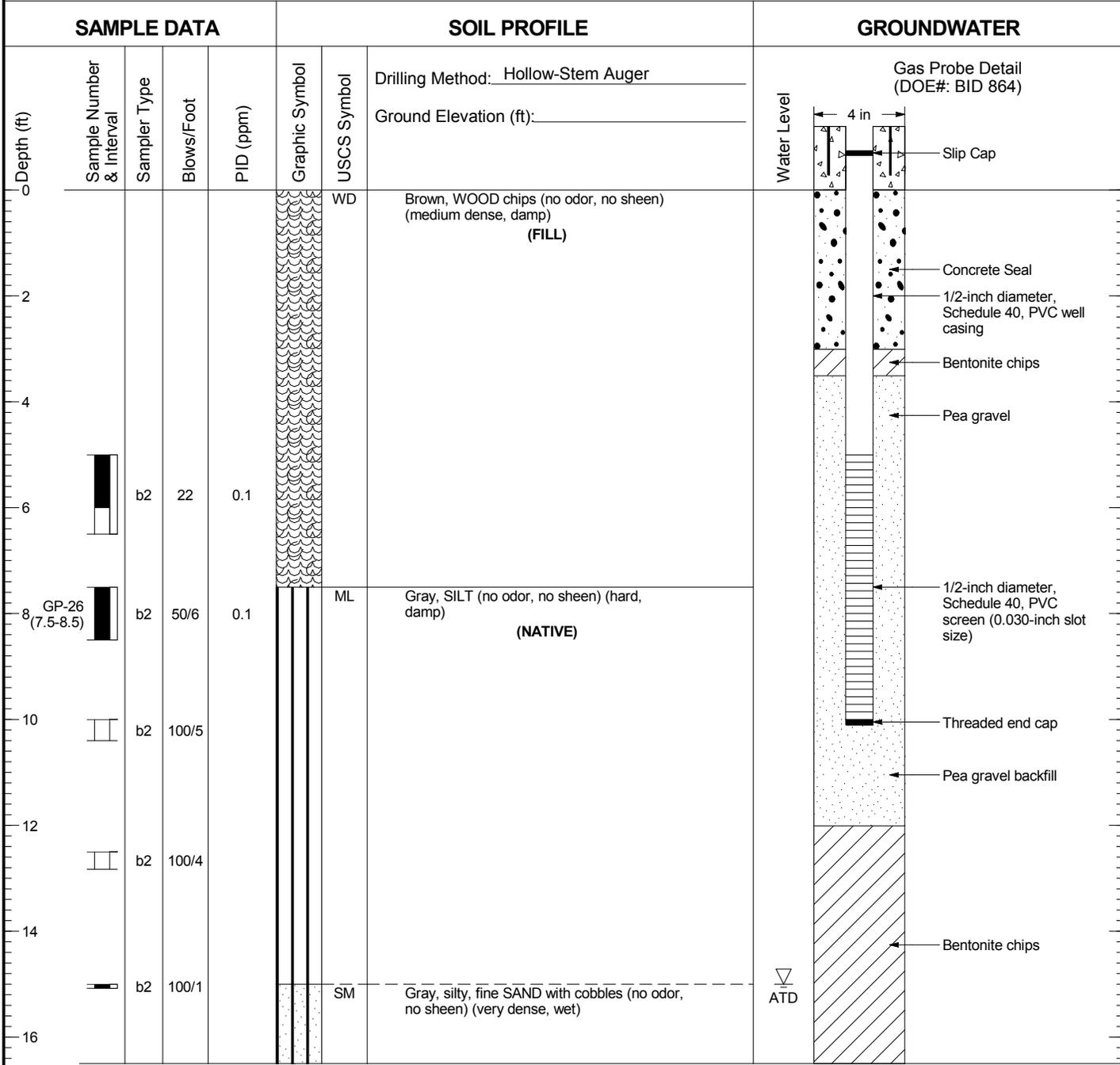


Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Gas Probe GP-25

Figure
G-26

GP-26



Boring Completed 10/29/14
Total Depth of Boring = 16.5 ft.

Gas Probe Completed 10/29/14
Total Depth of Gas Probe = 10.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.020.022 3/11/15 N:\PROJECTS\1148008.020.022.GPJ WELL LOG



Closed City of Yakima Landfill
Site
Yakima, Washington

Log of Gas Probe GP-26

Figure
G-27

GP-27

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hollow-Stem Auger</u>	Water Level <div style="text-align: center;"> </div>
							Ground Elevation (ft): _____ Drilled By: <u>Cascade Drilling Inc.</u>	
0						GP		Detail
2	a2						Brown, coarse GRAVEL with fine sand and cobbles (No odor, No sheen) (loose to medium dense, dry to moist) (FILL)	
4	a2		15	0.0				
6	a2		33				Soil Sample: GP-27(5.5-6.5)-04232015	
8	a2		30			DB	Municipal solid waste, plastic, brick debris (no odor, no sheen) (loose, wet) (LANDFILL)	ATD

Boring Completed 04/23/15
Total Depth of Boring = 8.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.03 7/29/15 N:\PROJECTS\1148008.030.GPJ WELL LOG



Closed City of Yakima Landfill
Yakima, Washington

Log of Soil Boring GP-27

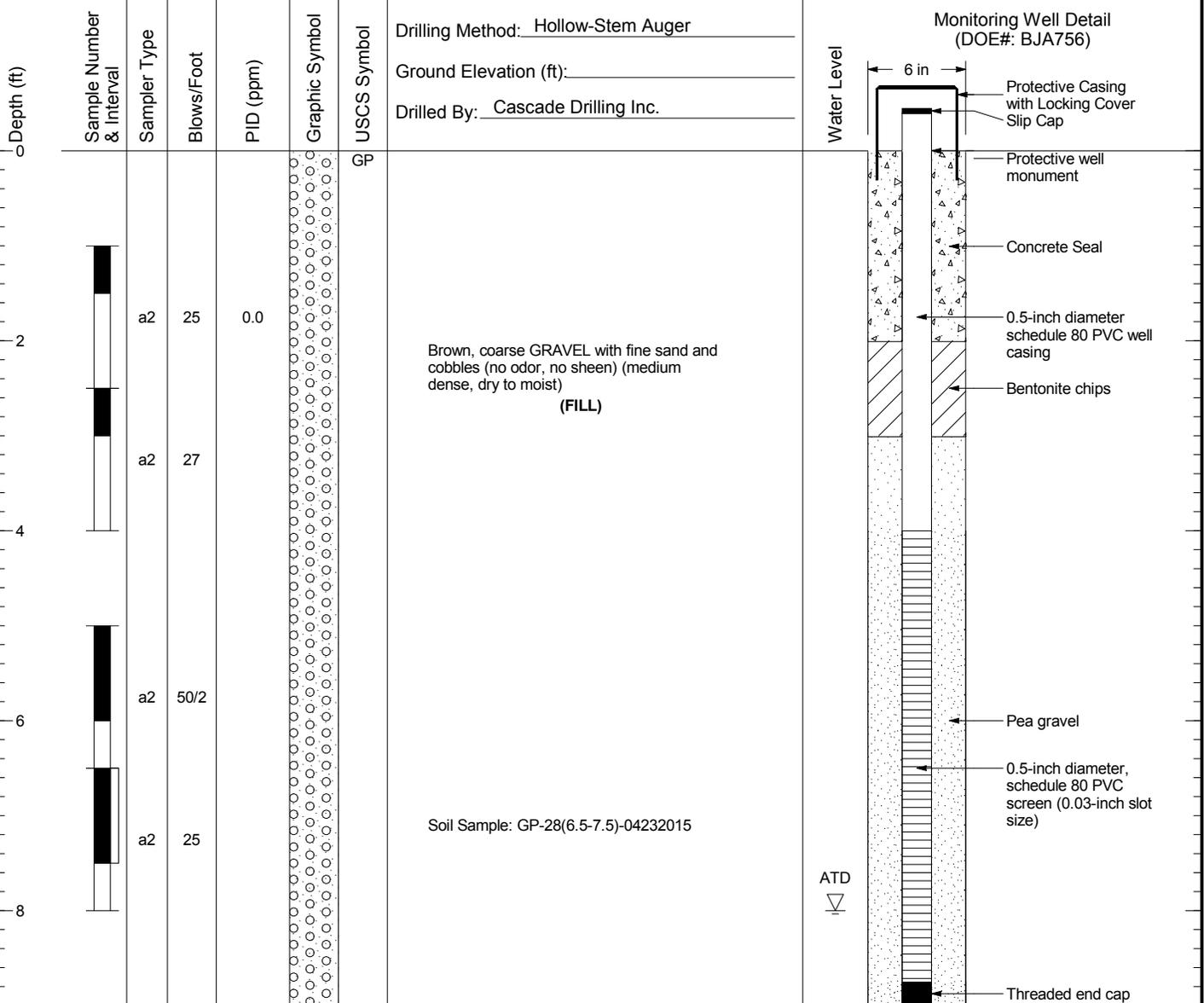
Figure
G-28

GP-28

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 04/23/15
Total Depth of Boring = 9.0 ft.

Monitoring Well Completed 04/23/15
Total Depth of Monitoring Well = 9.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.03 7/29/15 N:\PROJECTS\1148008.030.GPJ WELL LOG



Closed City of Yakima Landfill
Yakima, Washington

Log of Monitoring Well GP-28

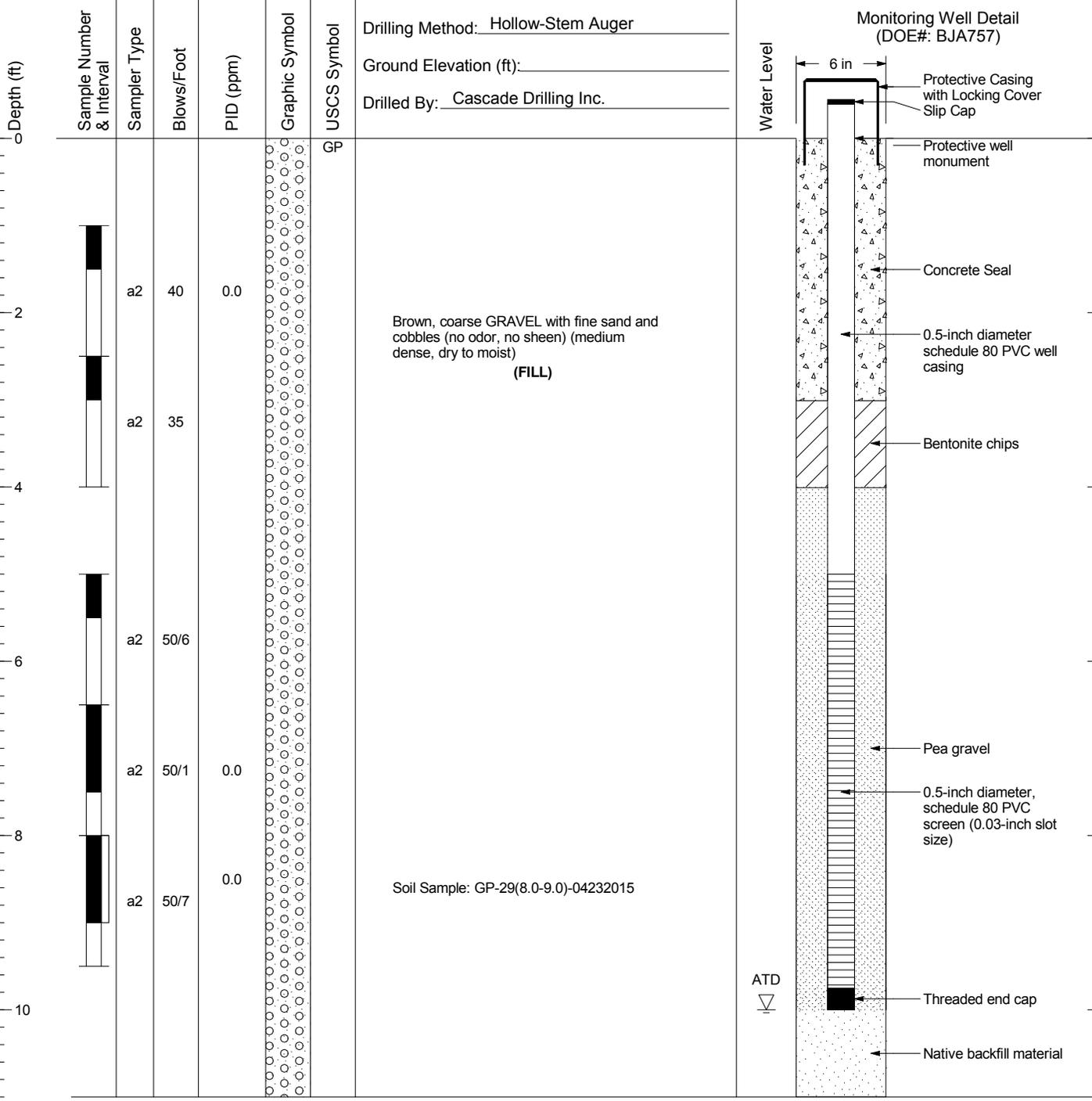
Figure
G-29

GP-29

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 04/23/15
Total Depth of Boring = 11.0 ft.

Monitoring Well Completed 04/23/15
Total Depth of Monitoring Well = 10.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

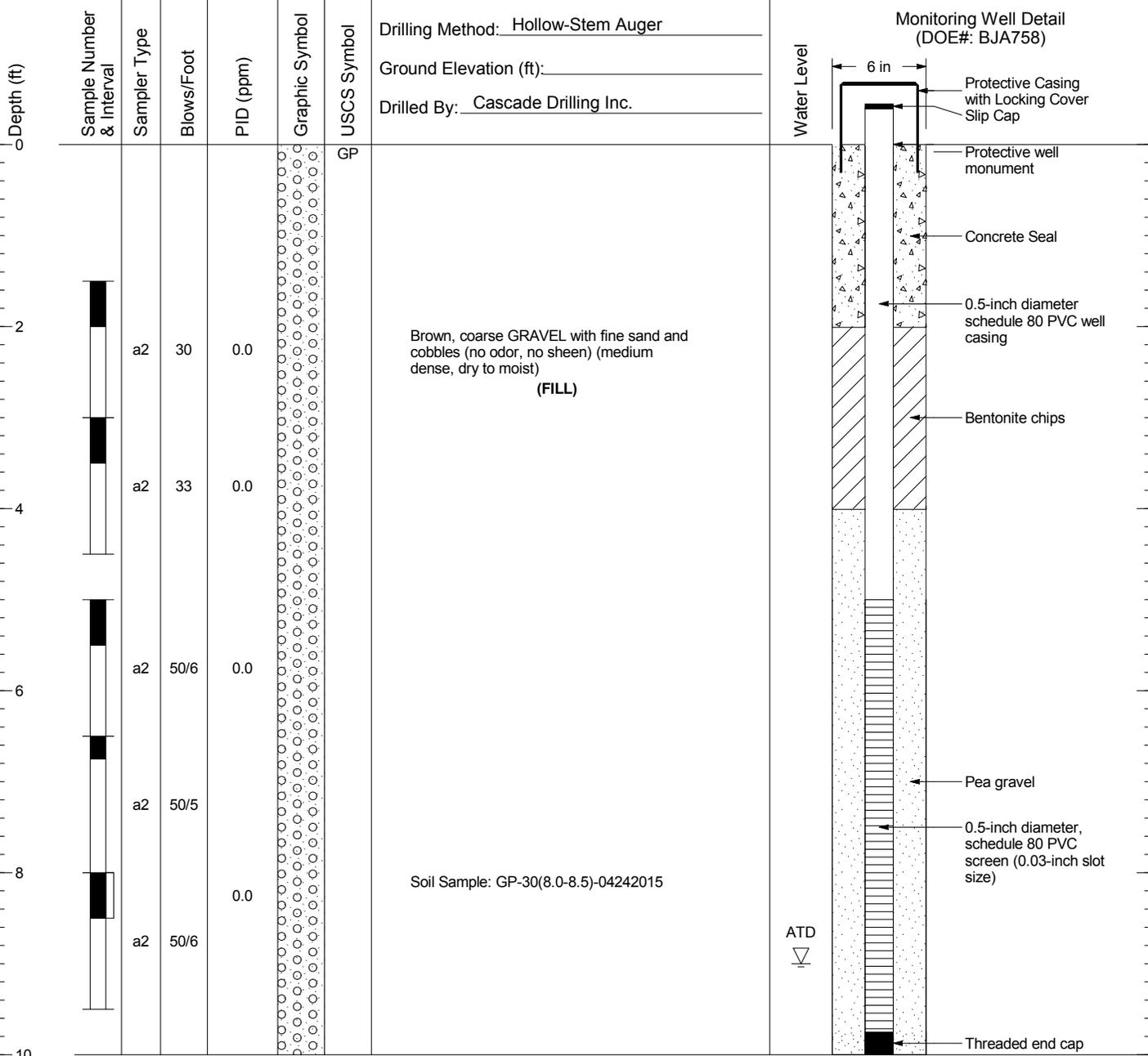
1148008.03 7/29/15 N:\PROJECTS\1148008.030.GPJ WELL LOG

GP-30

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 04/24/15
Total Depth of Boring = 10.0 ft.

Monitoring Well Completed 04/23/15
Total Depth of Monitoring Well = 10.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.03 7/29/15 N:\PROJECTS\1148008.030.GPJ WELL LOG



Closed City of Yakima Landfill
Yakima, Washington

Log of Monitoring Well GP-30

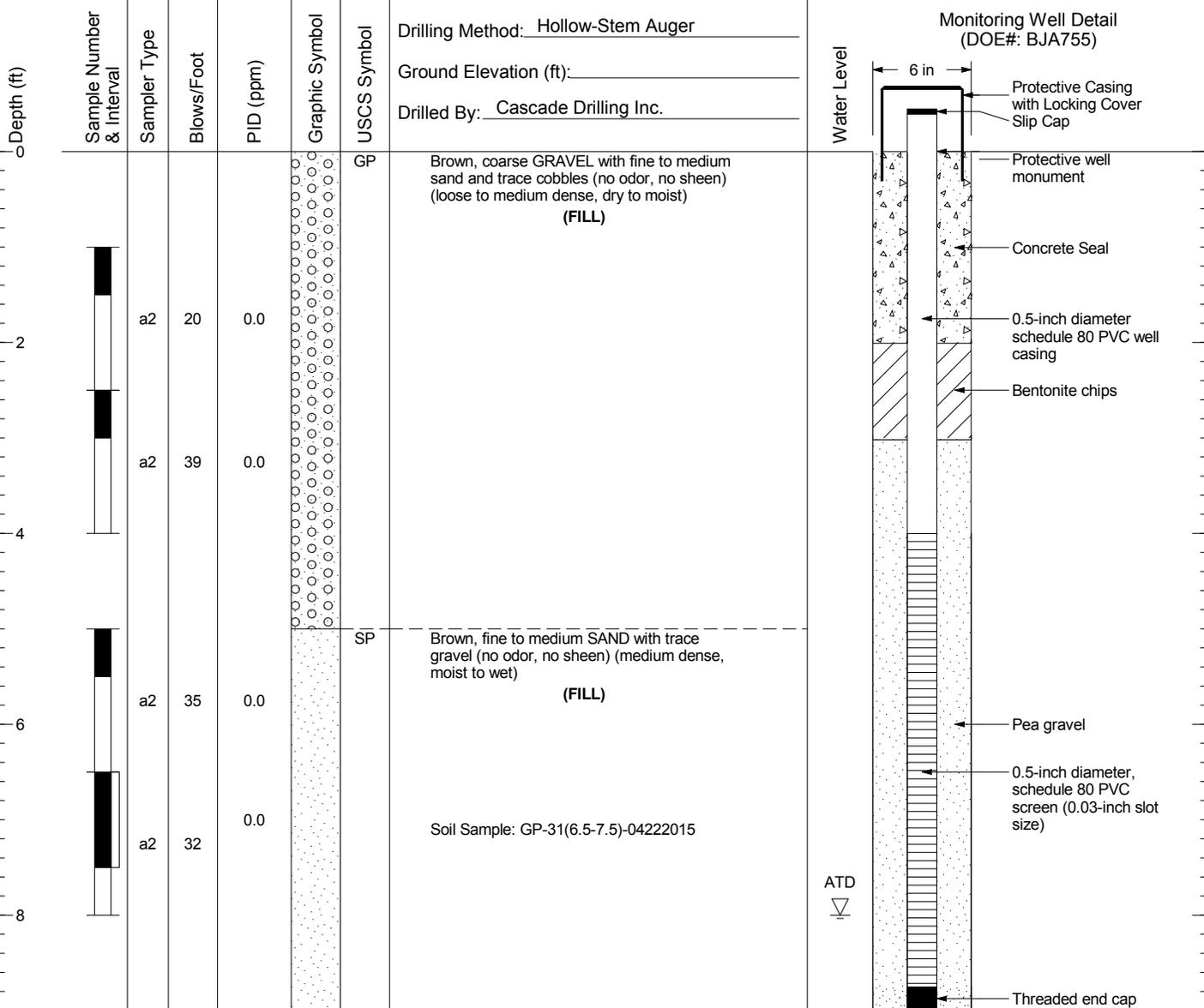
Figure
G-31

GP-31

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 04/22/15
Total Depth of Boring = 9.0 ft.

Monitoring Well Completed 04/22/15
Total Depth of Monitoring Well = 9.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148008.03 7/29/15 N:\PROJECTS\1148008.030.GPJ WELL LOG

Soil Boring Logs



22122 20th Avenue SE
 Bothell, Washington 98021
 Telephone: 425.402.8800
 SLR International Corp Fax: 425.402.8488

BORING NUMBER SB-1

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/9/09 COMPLETED 2/9/09 GROUND ELEVATION 1053.37 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 17.0 ft / Elev 1036.4 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5		D&M		66	12	GM		SILTY GRAVEL, brown, fine to coarse, some fines, few bricks, loose dry. @ 3.0 feet: Becomes black, with some municipal solid waste (glass, plastic, wood), little sand.
5.0		D&M		100	50/4"			@ 5.0 feet: Becomes very dense.
7.5		D&M		80	6			WOOD WASTE, loose, moist to wet. 1045.9
8.5								SILT, Black, organic, little municipal solid waste, medium dense, moist to wet. 1044.9
10.0		D&M		60	21	OL		
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09



22122 20th Avenue SE
 Bothell, Washington 98021
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BORING NUMBER SB-1

PAGE 2 OF 2

CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M		5	36			SILT, Black, organic, little municipal solid waste, medium dense, moist to wet. (continued)
15.0								
		D&M		0	11	OL		
17.5								
		D&M		80	40	GP		
								18.0 1035.4
20.0						SP		
								19.5 1033.9
		D&M		120	50/6"	GW		
								20.5 1032.9
								21.0 1032.4

∇ @ 17 feet: Becomes wet.

SANDY GRAVEL, dark olive gray, fine to medium, subrounded to rounded, some angular, some sand, medium dense, wet.

SAND, dark gray, fine- to medium-grained, very dense, wet.

SANDY GRAVEL, olive gray, fine to coarse, some fine- to coarse-grained sand, trace cobbles, very dense, wet.
 Boring completed at 21.0 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09

Figure H-1 (Page 2 of 2)



22122 20th Avenue SE
Bothell, Washington 98021
Telephone: 425.402.8800
SLR International Corp Fax: 425.402.8488

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/9/09 COMPLETED 2/9/09 GROUND ELEVATION 1054.95 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 18.0 ft / Elev 1037.0 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								WOOD WASTE, intermixed fine to coarse-grained gravel, loose.
2.5		D&M		5	9			@ 2.5 feet: Becomes intermixed with brown silty sand and organics.
5.0		D&M		5	18			@ 5.0 feet: Becomes medium dense.
7.5		D&M		30	8			MUNICIPAL SOLID WASTE, dark grey, silt, sand, plastic, glass, and wood waste, loose, moist.
10.0		D&M		10	4			@ 10 feet: Becomes particle board and painted wood, moist.
12.5								

REMARKS
 SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.
 ∇ Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09



22122 20th Avenue SE
 Bothell, Washington 98021
 Telephone: 425.402.8800
 SLR International Corp Fax: 425.402.8488

BORING NUMBER SB-2

CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
	X	D&M		100	12			MUNICIPAL SOLID WASTE , dark grey, silt, sand, plastic, glass, and wood waste, loose, moist. <i>(continued)</i> @ 12.5 feet: Becomes silty sand, olive gray, fine- to medium-grained (60% by volume), paper, glass, wood (40% by volume), moist.
								1041.5
15.0	X	D&M		90	5	SP		SAND , olive gray, fine-grained, some medium-grained rounded gravel, trace silt, loose, moist.
								1038.0
17.5	X	D&M			33	GW		SANDY GRAVEL , olive gray, fine to coarse, well-rounded, fine- to coarse-grained sand, trace silt, medium dense, wet.
								1035.5
20.0	X	D&M			8	SP		GRAVELLY SAND , olive gray, fine to coarse, fine to medium well-rounded gravel, loose, wet.
								1033.5

Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

 Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS GPJ GINT US.GDT 3/20/09

Figure H-2 (Page 2 of 2)



22122 20th Avenue SE
Bothell, Washington 98021
Telephone: 425.402.8800
SLR International Corp Fax: 425.402.8488

BORING NUMBER SB-3

PAGE 1 OF 2

CLIENT <u>City of Yakima</u>	PROJECT NAME <u>Former City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>2/9/09</u> COMPLETED <u>2/9/09</u>	GROUND ELEVATION <u>1057.91 ft</u> HOLE SIZE <u>8.5" Diameter</u>
DRILLING CONTRACTOR <u>Cascade Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	∇ AT TIME OF DRILLING <u>19.0 ft / Elev 1038.9 ft</u>
LOGGED BY <u>B. Robinson</u> CHECKED BY _____	AT END OF ---
NOTES _____	AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
						ML		GRAVELLY SILT, brown, some fine to coarse gravel, intermixed wood waste.
								1.3 ----- 1056.7 WOOD WASTE, bark mulch, loose, moist.
2.5		D&M		60	12			
5.0		D&M		0	5			
7.5		D&M		45	23			7.0 ----- 1050.9 SILTY SAND, olive gray, fine-grained, some fines, little fine to coarse gravel, medium dense to loose, moist.
10.0		D&M		10	7	SP-SM		@ 10 feet: Gravel caught in sampler, no recovery.
12.5		D&M		30	9			12.0 ----- 1045.9 MUNICIPAL SOLID WASTE, wood, paper, cloth, silty sand (25% by volume), loose, wet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR SB LOG YAKIMA SOIL BORINGS.GPJ_GINT US.GDT 4/13/09



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BORING NUMBER SB-3

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
15.0	X							MUNICIPAL SOLID WASTE, wood, paper, cloth, silty sand (25% by volume), loose, wet. (continued)
15.5	X	D&M		100	10	SM		SILTY SAND, olive gray, fine-grained, some fines, some organics, loose, moist. 1042.4
17.5	X	D&M		60	50/4"	GW		SANDY GRAVEL, gray, fine to coarse, some fine to coarse-grained sand, rounded, very dense, moist to wet. 1040.9
20.0	X	D&M		0	50/4"			@ 20.0 feet: Sampler wet. 1037.4
20.5								Boring completed at 20.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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Figure H-3 (Page 2 of 2)



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/9/09 COMPLETED 2/9/09 GROUND ELEVATION 1059.17 ft HOLE SIZE 8.5" Diameter
 DRILLING DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING 17.0 ft / Elev 1042.2 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 AFTER DRILLING _____

NOTES _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								WOOD WASTE, large pieces of wood up to 12 inches.
2.5		SS		100	7			@ 2.5 feet: Becomes reddish brown, bark mulch, loose, moist.
5.0		SS		10	50/5"			@ 5.0 feet: Becomes fine bark mulch, dense.
7.5		SS		10	10			
10.0		SS		40	9			@ 10.0 feet: Trace gravel, loose.
10.5								MUNICIPAL SOLID WASTE, dark gray, paper and yard waste, loose.
12.5								

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REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.



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BORING NUMBER SB-4

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		SS		100	13			MUNICIPAL SOLID WASTE , dark gray, paper and yard waste, loose. (continued) @ 12.5 feet: Becomes plastic, paper, and soil (25% by volume). 1045.7
15.0								
		SS			14	SM		SILTY SAND , fine-grained, some fines, some waste, loose. @ 14.5 feet: Becomes olive gray, some organics, no waste, wet.
17.5								
		SS			50/3"	GW		SANDY GRAVEL , gray, fine to coarse, some fine to coarse-grained sand, very dense, wet. 1042.2
								Boring complete, refusal at 18.0 feet. Sampler wet. 1041.2

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

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Figure H-4 (Page 2 of 2)



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BORING NUMBER SB-5

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/9/09 COMPLETED 2/9/09 GROUND ELEVATION 1058.29 ft HOLE SIZE 8.5" Diameter
 DRILLING DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
						GP		GRAVEL, 1058.0 WOOD WASTE, bark mulch, some sand, loose, moist.
2.5		D&M		80	15			@ 2.0 feet: Plastic sheets in wood waste.
5.0		D&M		70	14			
7.5		D&M		60	7			
10.0		D&M		25	7			
12.5		D&M		25	6			
								6.0 1052.3 MUNICIPAL SOLID WASTE, wood waste, paper, metal foil, (50% wood waste by volume), loose, wet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-5

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
15.0	X							MUNICIPAL SOLID WASTE, wood waste, paper, metal foil, (50% wood waste by volume), loose, wet. (continued)	
	X	D&M		60	16			SILTY SAND, dark olive gray, fine- to coarse-grained, some fines, medium dense, moist.	1042.3
17.5	X	D&M		100	50/6"	GW-GM		SILTY GRAVEL, olive gray, fine to coarse, subangular to rounded, some silt, little fine- to coarse-grained sand, trace cobbles, very dense, moist to wet.	1041.3
									1039.8

Boring completed at 18.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.

SLR SB LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/13/09

Figure H-5 (Page 2 of 2)



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BORING NUMBER SB-6

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/10/09 COMPLETED 2/10/09 GROUND ELEVATION 1060.02 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 17.0 ft / Elev 1043.0 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
						GP		0.3 GRAVEL , dark gray, fine to coarse, rounded, some fines, little fine- to coarse-grained sand, medium dense, moist. 1059.8 WOOD WASTE , bark mulch, soil, 50-60% wood waste by volume, moist.
								1.0 1059.0
								SILTY GRAVEL , dark gray, fine to coarse, rounded, some fines, little fine- to coarse-grained sand, medium dense, moist.
2.5								
		D&M		90	34	GM		
5.0								
		D&M		70	12			5.5 1054.5
								MUNICIPAL SOLID WASTE , plastic, paper, glass, tires, wood, soil (25% by volume), loose, moist.
7.5								
		D&M		60	53			@ 7.5 feet: Gravel caught in sampler.
10.0								
		D&M		40	3			@ 10 feet: Soil 30-40% by volume.
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-6

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M		40	9			MUNICIPAL SOLID WASTE, plastic, paper, glass, tires, wood, soil (25% by volume), loose, moist. (continued)
15.0								
		D&M		66	43			SANDY GRAVEL, dark gray, fine to coarse, rounded, some fine- to coarse-grained sand, trace to few fines, dense to very dense, moist.
17.5								
		D&M			50/4"	GW		@ 17 feet: Becomes wet.
								Boring complete, refusal at 18.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

 Water level at time of drilling.

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Figure H-6 (Page 2 of 2)



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BORING NUMBER SB-7

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/10/09 COMPLETED 2/10/09 GROUND ELEVATION 1062.05 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 17.0 ft / Elev 1045.1 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5								WOOD WASTE, bark mulch intermixed with gravel, loose.
3.0								1059.1
3.5		D&M		70	14	GM		SILTY GRAVEL, dark olive gray, fine to coarse, subangular to rounded, some fines, little fine- to coarse-grained sand, loose, moist. 1058.6
5.0		D&M			50/4"			MUNICIPAL SOLID WASTE, paper, plastic, cloth, wood, soil (<25% by volume), very dense to loose, moist, strong odor.
6.0								From 6.0 to 7.0 feet: Drilling through wood.
7.5		D&M		100	50/3"			
10.0		D&M		0	9			
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M		5	8			MUNICIPAL SOLID WASTE , paper, plastic, cloth, wood, soil (<25% by volume), very dense to loose, moist, strong odor. <i>(continued)</i> @ 12.5 feet: Wood and grass clippings in cuttings.
15.0								
		D&M		40	15			@ 15.0 feet: Wood and paper.
16.0								1046.1
17.5								
		D&M			73	GW		SANDY GRAVEL , olive gray, fine to coarse, rounded, some fine- to coarse-grained sand, little silt, very dense, moist to wet. ∇ @ 17.0 feet: Becomes wet. @ 17.5 feet: Cobble stuck in sampler, oil sheen on sample.
19.0								1043.1

Boring completed at 19.0 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09

Figure H-7 (Page 2 of 2)



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BORING NUMBER SB-8

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/10/09 COMPLETED 2/10/09 GROUND ELEVATION 1063.18 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 18.5 ft / Elev 1044.7 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
						GP		0.3 GRAVEL , 1062.9 SILTY GRAVEL , olive gray, fine to coarse, subangular to rounded, some fines, little fine- to coarse-grained sand, very dense, damp. From 2.0 to 6.0 feet: Difficult drilling, few wood waste, dense.
2.5								
	X	D&M		80	50/4"			
5.0						GM		
	X	D&M		100	40			@ 6.0 feet: Becomes dark gray, fine to medium, trace waste (paper and plastic), very loose, moist.
7.5								
	X	D&M		66	3			
10.0								9.5 1053.7 MUNICIPAL SOLID WASTE , plastic, paper, glass, ~40% to 50% soil, loose, moist
	X	D&M		40	6			
12.5								
	X	D&M		66	8			

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-8

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
15.0	X							MUNICIPAL SOLID WASTE , plastic, paper, glass, ~40% to 50% soil, loose, moist (<i>continued</i>)
		D&M		10	5			@ 15.0 feet: Tire caught in sampler.
17.5	X							
		D&M		70	27	SM		SILTY SAND , olive gray, fine-grained sand, some fines, trace organics, loose, moist. 1046.2
						GW		SANDY GRAVEL , dark olive gray, fine to coarse, some fine- to coarse-grained sand, medium dense, wet. 1044.7
								Boring completed at 19.0 feet. 1044.2

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

SLR SB LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/13/09

Figure H-8 (Page 2 of 2)



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BORING NUMBER SB-9

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/10/09 COMPLETED 2/10/09 GROUND ELEVATION 1062.66 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 17.0 ft / Elev 1045.7 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5								WOOD WASTE, bark mulch and branches.
2.5								1060.2
5.0		D&M		60	16	GP-GM		SILTY GRAVEL, grayish brown, fine to coarse, angular to rounded, some silt, little fine- to coarse-grained sand, medium dense, moist, few concrete rubble.
5.0								1058.2
7.5		D&M		50	7			MUNICIPAL SOLID WASTE, metal, glass, paper, ~25% soil, loose.
7.5								@7.5 feet: Becomes wood and concrete, (cobble caught in sampler).
10.0		D&M		70	14			1053.2
10.0								SILTY SAND, dark olive brown, fine- to medium-grained, little wood waste, loose, moist, strong odor.
12.5		D&M		100	4	SM		
12.5								@ 12.5 feet: decreased wood waste.

REMARKS
 SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.
 ∇ Water level at time of drilling.

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BORING NUMBER SB-9

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
	X							<p>SILTY SAND, dark olive brown, fine- to medium-grained, little wood waste, loose, moist, strong odor. <i>(continued)</i></p> <p>@14.5 feet: Becomes olive brown, fine-grained, trace to few wood and bark, moist.</p> <p>∇ @17 feet: Becomes olive gray, fine- to medium-grained, trace wood, wet.</p>
15.0								
	X	D&M		100	3	SM		
17.5								
	X	D&M		100	6			
20.0								19.5
	X	D&M			37	GW		1043.2
								21.5

Boring completed at 21.5 feet.

1041.2

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR SB LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/13/09

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/10/09 COMPLETED 2/10/09 GROUND ELEVATION 1063.96 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 17.0 ft / Elev 1047.0 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5		D&M		100	41			WOOD WASTE , bark mulch, trace fine- to medium-grained gravel, dense, moist.
5.0		D&M		70	14	GM		SILTY GRAVEL , olive gray, fine to coarse, well-rounded, some fines, little fine- to coarse-grained sand, damp, few concrete rubble. From 4.0 to 6.0 feet: Difficult drilling.
7.5		D&M		70	6			MUNICIPAL SOLID WASTE , paper, glass, loose, wood.
10.0		D&M		50	12	GW-GM		SILTY GRAVEL , dark olive gray, fine to coarse, some silt, little fine- to coarse-grained sand, loose to very loose, moist.
12.5		D&M		100	5			@ 10.0 feet: Little wood and plastic.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
15.0								MUNICIPAL SOLID WASTE, glass, paper, wood, 25% soil, very loose.
		D&M		40	5			@ 15 feet: Becomes silty sand (75% by volume), and solid waste.
17.5								17.0 ▽ SANDY GRAVEL, olive gray, fine to coarse, well-rounded, few cobbles, fine- to coarse-grained sand, very dense, wet. 1047.0
		D&M		90	72	GW		19.0 1045.0

Boring completed at 19.0 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

SLR SB LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/13/09



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BORING NUMBER SB-11

CLIENT <u>City of Yakima</u>	PROJECT NAME <u>Former City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>2/10/09</u> COMPLETED <u>2/10/09</u>	GROUND ELEVATION <u>1064.00 ft</u> HOLE SIZE <u>8.5" Diameter</u>
DRILLING CONTRACTOR <u>Cascade Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	AT TIME OF DRILLING <u>Dry</u>
LOGGED BY <u>B. Robinson</u> CHECKED BY _____	AT END OF <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
						WW		WOOD WASTE.
								1062.0
2.5		D&M		80	40	GM		SILTY GRAVEL, grayish brown, fine to coarse, rounded, some fines, little fine-to coarse-grained sand, medium dense.
								1059.5
5.0		D&M		70	40			MUNICIPAL SOLID WASTE, glass, paper, cloth, plastic, little silty sand (25% by volume), medium dense to loose.
								@ 7.5 feet: Becomes 75% soil by volume, strong odor.
7.5		D&M		75	11			
								@ 10.0 feet: Tire tube caught in sampler.
10.0		D&M		10	11			
								1052.0
12.5						GM		SILTY GRAVEL, dark olive brown, fine to coarse, rounded, some fines, few waste (linoleum), very loose, moist.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-11

PAGE 2 OF 2

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M		100	4	GM		SILTY GRAVEL , dark olive brown, fine to coarse, rounded, some fines, few waste (linoleum), very loose, moist. <i>(continued)</i>
15.0								
		D&M			36	SM		SILTY SAND , olive brown, fine-grained, little wood waste, medium dense, moist
								@ 16.0 feet: Becomes olive gray, fine- to medium-grained, no waste.
17.5								
		D&M			50/6"	GW		SANDY GRAVEL , olive gray, fine to coarse, well-rounded, some fine- to coarse-grained sand, moist.

Boring completed at 18.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-12

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/10/09 COMPLETED 2/10/09 GROUND ELEVATION 1063.26 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING 18.0 ft / Elev 1045.3 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5								WOOD WASTE, little fine- to coarse-grained sand, little silt, few fine gravel.
3.0								1060.3
5.0		D&M		90	11			MUNICIPAL SOLID WASTE, loose.
7.5		D&M		5	40			@ 5 feet: Wood caught in shoe.
10.0		D&M		50	50/5"			@ 7.5 feet: Glass, paper, plastic, grass clippings, some silty sand (50% by volume), very dense.
12.5		D&M		100	85			@ 10.0 feet: Roofing material.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.

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BORING NUMBER SB-12

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M		80	6			MUNICIPAL SOLID WASTE , loose. <i>(continued)</i> @ 12.5 feet: Glass, paper, plastic, wood, silty fine gravel (50% by volume), very loose.
15.0								
		D&M		70	36			@ 15.0 feet: Metal, plastic, wood, silty fine gravel (25% by volume), medium dense.
17.5								
		D&M		5	50/6"			@ 17.5 feet: Cobble caught in sampler.
18.0								1045.3
						GW		SANDY GRAVEL , olive gray, fine to coarse, well-rounded, fine- to coarse-grained sand, trace silt, dense, wet.
20.0								
		D&M			64			
21.5								1041.8

Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

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BORING NUMBER SB-13

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/11/09 COMPLETED 2/11/09 GROUND ELEVATION 1060.65 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING ---
 LOGGED BY B. Robinson CHECKED BY --- AT END OF ---
 NOTES --- AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								WOOD WASTE, little gravel, little silt, few sand, moist.
2.5								
		D&M	SB13-S1	75	12			MUNICIPAL SOLID WASTE, paper, grass, glass, ~10% soil, loose, moist.
5.0								
		D&M	SB13-S2	75	15			
7.5								@ 7.5 feet: Paper, plastic, grass clippings, soil (<5% by volume), medium dense.
		D&M		80	27			
10.0								@ 10.0 feet: Glass, grass clippings, soil (25% by volume), medium dense.
		D&M		40	40			
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M		20	9			MUNICIPAL SOLID WASTE , paper, grass, glass, ~10% soil, loose, moist. <i>(continued)</i>
15.0		D&M		10	16			@ 15.0 feet: Becomes silty sand (70% by volume), and 30% wood, medium dense.
17.5		D&M		15	39			Waste: Sand and gravel (70% by volume), plastic sheeting.
								1042.7
20.0						GW		SANDY GRAVEL , olive gray, fine to coarse, some fine- to coarse-grained sand, medium dense, moist to wet. From 19.0 to 23.0 feet: Difficult drilling.
22.5								
								23.0
								1037.7

Boring completed at 23.0 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

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BORING NUMBER SB-14

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/11/09 COMPLETED 2/11/09 GROUND ELEVATION 1060.74 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 21.0 ft / Elev 1039.7 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5								
		D&M		0	39	GM		SILTY GRAVEL, fine to coarse, some fines, some wood waste, medium dense to loose.
5.0								
		D&M	SB14-S1A, SB14-S1B	80	6			@ 5.0 feet: Becomes dark olive brown, little fine- to coarse-grained sand, few municipal waste, loose, moist.
6.0								1054.7
								MUNICIPAL SOLID WASTE, soil, wood, paper, plastic, glass, very loose.
7.5								
		D&M		0	4			@ 7.5 feet: Plastic caught in sampler.
10.0								
		D&M	SB14-S2	40	30			@ 10.0 feet: Paper, plastic, glass, soil, medium dense, moist.
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-14

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M		10	13			MUNICIPAL SOLID WASTE , soil, wood, paper, plastic, glass, very loose. <i>(continued)</i> @ 12.5 feet: Wood, glass, paper, very moist. Wood caught in sampler, limited recovery.
15.0								
		D&M		5	8			@ 15 feet: Paper, loose.
17.5								
		D&M	SB14-S3	40	13			@ 17.5 feet: Metal can, plastic, wood, fabric, soil (10% by volume), moist, loose. 1042.7
20.0								
		D&M	SB14-S4	80	34	GW		SANDY GRAVEL , olive gray, fine to coarse, well-rounded, fine- to coarse-grained sand, moist.
								@ 21 feet: Becomes wet.
								∇ 21.5 1039.2

Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09

Figure H-14(Page 2 of 2)



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BORING NUMBER SB-15

PAGE 1 OF 2

CLIENT <u>City of Yakima</u>	PROJECT NAME <u>Former City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>2/11/09</u> COMPLETED <u>2/11/09</u>	GROUND ELEVATION <u>1058.77 ft</u> HOLE SIZE <u>8.5" Diameter</u>
DRILLING CONTRACTOR <u>Cascade Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	∇ AT TIME OF DRILLING <u>21.0 ft / Elev 1037.8 ft</u>
LOGGED BY <u>B. Robinson</u> CHECKED BY _____	AT END OF <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
							0.5	WOOD WASTE, bark mulch. 1058.3
								SILTY GRAVEL, dark brown, medium to coarse, well-rounded, some silt, little fine- to medium-grained sand, few cobbles, medium dense, damp.
2.5		D&M	SB15-S1	60	32	GM		@ 4.5 feet: Becomes olive gray, some fines, little sand, loose, moist to wet.
5.0		D&M	SB15-S2	33	9			
7.5		D&M	SB15-S3	10	4		7.0	MUNICIPAL SOLID WASTE, styrofoam, plastic, wood, silty sand (40% by volume) 1051.8
10.0		D&M	SB15-S4	30	4			@ 10.0 feet: Tires, plastic, wood, soil (20% by volume), loose.
12.5		D&M	SB15-S5	45	30			@ 12.5 feet: Paper, grass, wood, glass, plastic, medium dense.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR SB LOG YAKIMA SOIL BORINGS GPJ GINT US GDT 4/13/09



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BORING NUMBER SB-15

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
15.0	X							MUNICIPAL SOLID WASTE, styrofoam, plastic, wood, silty sand (40% by volume) (continued)
	X	D&M		0	14			@ 15.0 feet: No recovery.
17.5	X							@ 17.5 feet: No recovery, piece of wood blocking sampler.
	X	D&M		<5	9			
20.0	X							19.5 ----- 1039.3 SILTY SAND
	X	D&M		20	38	SM		21.0 ▽ 1037.8
						GW		21.5 1037.3 SANDY GRAVEL, olive gray, fine to coarse, rounded, some fine- to coarse-grained sand, medium dense, wet. Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

SLR SB LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/13/09



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BORING NUMBER SB-16

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/11/09 COMPLETED 2/11/09 GROUND ELEVATION 1056.25 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 17.0 ft / Elev 1039.3 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
						GW		SANDY GRAVEL , dark olive brown, fine to coarse, well-rounded, some fines, little fine- to coarse-grained sand, few cobbles, medium dense, damp.
2.5								1054.3
		D&M	SB16-S1	40	32	GM		SILTY GRAVEL , olive gray, medium to coarse, some fines, little fine- to medium-grained sand, medium dense, moist.
5.0								1051.8
		D&M		0	9			MUNICIPAL SOLID WASTE , wood, grass, paper, glass, plastic, metal, loose.
7.5								
		D&M	SB16-S2	33	3			
10.0								
		D&M		15	2			
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M		0	10			MUNICIPAL SOLID WASTE, wood, grass, paper, glass, plastic, metal, loose. (continued)
15.0								
		D&M	SB16-S3	40	43			
17.5								
		D&M	SB16-S4	90	33			SANDY GRAVEL, olive gray, fine to coarse, well-rounded, some fine- to coarse-grained sand, medium dense, wet.
20.0								
		D&M	SB16-S5	66	26	GW		

17.0 ∇ 1039.3

21.5 1034.8

Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/11/09 COMPLETED 2/11/09 GROUND ELEVATION 1053.21 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING ---
 LOGGED BY B. Robinson CHECKED BY --- AT END OF ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5		D&M		25	14	ML		GRAVELLY SILT, brown, fine to coarse, subangular to well-rounded gravel, some fines, little sand, organic, few construction debris, stiff, dry.
5.0		D&M	SB17-S1, SB17-S2	30	8			
6.0								1047.2 MUNICIPAL SOLID WASTE, glass, plastic, loose.
7.5		D&M	SB17-S3	40	50/5"			@ 7.5 feet: Gravel, silt, paper, plastic, and glass, very dense.
10.0		D&M		0	50/1"			@ 10.0 feet: Plastic sheet on outside of sampler, no recovery.
11.5						GP		1041.7 SANDY GRAVEL, olive gray with orange staining, fine to coarse, well-rounded, some fine- to coarse-grained sand, few cobbles, damp.
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
	X	D&M	SB17-S4	100	50/5"	GP		SANDY GRAVEL, olive gray with orange staining, fine to coarse, well-rounded, some fine- to coarse-grained sand, few cobbles, damp. (continued)
15.0								
	X	D&M	SB17-S5	20	50/5"			
								16.0

Boring completed at 16 feet.

1037.2

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

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Figure H-17 (Page 2 of 2)



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BORING NUMBER SB-18

PAGE 1 OF 2

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/12/09 COMPLETED 2/12/09 GROUND ELEVATION 1064.27 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING ---
 LOGGED BY B. Robinson CHECKED BY --- AT END OF ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								WOOD WASTE, reddish brown, bark mulch.
2.5								
		D&M	SB18-S1	100	12			
5.0								
		D&M	SB18-S2	100	17			
6.0								1058.3 MUNICIPAL SOLID WASTE, silty gravel (90% by volume), glass, metal, medium dense, moist.
7.5								@ 7.5 feet: Gravelly sand (60% by volume), paper, wood, glass, plastic, moist.
		D&M	SB18-S3	50	24			
10.0								@ 10.0 feet: Soil (10% by volume), paper, wood, plastic, very dense, moist.
		D&M	SB18-S4	70	50/4"			
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

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BORING NUMBER SB-18

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M	SB18-S5	35	14			MUNICIPAL SOLID WASTE , silty gravel (90% by volume), glass, metal, medium dense, moist. <i>(continued)</i> @ 12.5 feet: Soil (25% by volume), tires, plastic, wood, loose, moist.
15.0								
		D&M	SB18-S6	45	8			@ 15 feet: Soil (10% by volume), plastic, tires, loose, moist to wet.
17.5								
		D&M	SB18-S7	33	54			@ 17.5 feet: Silty sand (50% by volume), paper, metal, moist.
						SM		19.0 1045.3 19.5 1044.8 SILTY SAND , fine-grained, some silt, organic, dense, moist.
20.0		D&M	SB18-S8	100	67			SANDY GRAVEL , olive gray, fine to coarse, some fine- to coarse-grained sand, few cobbles, dense.
						GW		
22.5								
								23.0 1041.3

Boring completed at 23.0 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09

Figure H-18(Page 2 of 2)



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BORING NUMBER SB-19

PAGE 1 OF 2

CLIENT <u>City of Yakima</u>	PROJECT NAME <u>Former City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>2/12/09</u> COMPLETED <u>2/12/09</u>	GROUND ELEVATION <u>1060.86 ft</u> HOLE SIZE <u>8.5" Diameter</u>
DRILLING CONTRACTOR <u>Cascade Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	∇ AT TIME OF DRILLING <u>18.5 ft / Elev 1042.4 ft</u>
LOGGED BY <u>B. Robinson</u> CHECKED BY _____	AT END OF ---
NOTES _____	AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5								WOOD WASTE, some fine to medium gravel, loose.
5.0								
5.5								1055.4
5.5						SM		SILTY SAND, olive gray, fine-grained, some fines, little wood, few bricks.
7.0								1053.9
7.5								MUNICIPAL SOLID WASTE, Soil (50% by volume), plastic, wood, layers of waste and soil, very loose.
10.0								@ 10.0 feet: Silty sand layer 8" thick, wood, plastic, glass, very loose, moist.
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-19

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M	SB19-S4	10	12			MUNICIPAL SOLID WASTE , Soil (50% by volume), plastic, wood, layers of waste and soil, very loose. <i>(continued)</i> @12.5 feet: Soil and decomposable (80% by volume), plastic, loose, moist.
15.0								
		D&M	SB19-S5	40	18			@ 15.0 feet: soil, wood, paper, glass, plastic, medium dense, moist.
17.5								
		D&M	SB19-S6	90	44			@ 17.5 feet: soil, wood, metal, dense, moist.
								1042.9
		D&M	SB19-S7	20	32	GP		SANDY GRAVEL , olive gray, fine to coarse, well-rounded, some fine- to coarse-grained sand, few cobbles, dense to medium dense, moist to wet.
20.0								
								1040.4

Boring completed at 20.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-20

PAGE 1 OF 2

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/12/09 COMPLETED 2/12/09 GROUND ELEVATION 1062.25 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 18.5 ft / Elev 1043.8 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								WOOD WASTE, fine, trace fine to medium gravel, medium dense, moist.
2.5								
		D&M	SB20-S1	100	16			
4.5								1057.8
						SM		SILTY SAND, gray, little fine- to coarse-grained, some fines, fine to coarse gravel, rounded, trace glass and plastic, medium dense, moist .
5.0								
		D&M	SB20-S2	80	19			
7.0								1055.3
								MUNICIPAL SOLID WASTE, Soil (25% by volume), glass, plastic, metal, wood, medium dense, moist.
7.5								
		D&M	SB20-S3	66	16			
10.0								@ 10.0 feet: Paper, yard waste, soil, very loose, moist.
		D&M	SB20-S4	33	5			
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-20

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
	X	D&M	SB20-S5	66	12			MUNICIPAL SOLID WASTE , Soil (25% by volume), glass, plastic, metal, wood, medium dense, moist. <i>(continued)</i> @ 12.5 feet: Decomposable (90% by volume), paper, plastic, glass, loose, moist.
15.0								
	X	D&M	SB20-S6	33	18			@ 15.0 feet: Paper, medium dense.
17.5								
	X	D&M	SB20-S7	30	36/6"	GW		SANDY GRAVEL , gray, fine to coarse, some fine- to medium-grained sand, little fines, moist.
20.0								
	X	D&M	SB20-S8	66	36			@ 18.5 feet: Becomes wet.
20.5								

Boring completed at 20.5 feet.

1046.8

1041.8

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09

Figure H-20(Page 2 of 2)



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BORING NUMBER SB-21

PAGE 1 OF 2

CLIENT <u>City of Yakima</u>	PROJECT NAME <u>Former City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>2/12/09</u> COMPLETED <u>2/12/09</u>	GROUND ELEVATION <u>1063.80 ft</u> HOLE SIZE <u>8.5" Diameter</u>
DRILLING CONTRACTOR <u>Cascade Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	∇ AT TIME OF DRILLING <u>19.0 ft / Elev 1044.8 ft</u>
LOGGED BY <u>C. Lee</u> CHECKED BY _____	AT END OF ---
NOTES _____	AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5								WOOD WASTE , fine, bark and sawdust, few fine to medium gravel, loose to medium dense, damp.
5.0		D&M	SB21-S1	100	6			
7.5		D&M	SB21-S2	100	16			
8.5		D&M	SB21-S3	100	24			
8.5						SM		SILTY SAND , gray, fine- to coarse-grained, some fines, little fine to coarse gravel, few cobbles, medium dense, moist. 1055.3
9.5								MUNICIPAL SOLID WASTE. 1054.3
10.0		D&M	SB21-S4	5	4			@ 10.0 feet: Soil/decomposable (95% by volume), paper, very loose.
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-21

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M	SB21-S5	15	8			MUNICIPAL SOLID WASTE. <i>(continued)</i> @ 12.5 feet: Soil/decomposable (90% by volume), paper, loose.
15.0								
		D&M	SB21-S6	80	7			@ 15 feet: Soil (35% by volume), paper, wood, plastic, glass, loose.
17.5								
		D&M	SB21-S7	50	13			@ 17.5 feet: Soil/decomposable (60% by volume), wood, plastic, metal, loose.
		D&M	SB21-19-19.4'	100	50/5"			19.0 ▽ 1044.8 WOOD WASTE , sludge, trace municipal solid waste, mostly decomposed, very dense, wet. 1044.3
20.0								
		D&M	SB21-S8	100	36	SP		GRAVELLY SAND , gray, fine- to coarse-grained, some fine to coarse gravel, few cobbles and silt, medium dense, wet.
								21.5 1042.3

Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

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BORING NUMBER SB-22

PAGE 1 OF 2

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/13/09 COMPLETED 2/13/09 GROUND ELEVATION 1058.85 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING 17.0 ft / Elev 1041.9 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
						GM		WOOD WASTE, some gravel. 1058.4
								SILTY GRAVEL, gray, fine to coarse, some silt, little fine- to coarse-grained sand, moist. 1057.1
2.5		D&M	SB22-S1	66	4			MUNICIPAL SOLID WASTE, soil/decomposable (95% by volume), plastic, glass, moist, layers of gray silty sand with few coarse gravel, loose.
5.0		D&M	SB22-S2	20	4			
7.5		D&M	SB22-S3	33	10			SANDY SILT, gray, fine-grained, trace municipal solid waste, trace cobbles, medium stiff to hard, moist. 1051.9
10.0		D&M	SB22-S4	60	6	ML		@10.0 feet: No municipal solid waste.
12.5		D&M		90	8			@13 feet: Becomes wet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
15.0						ML		SANDY SILT, gray, fine-grained, trace municipal solid waste, trace cobbles, medium stiff to hard, moist. (continued)
		D&M		80	58			
17.5						GM		SANDY GRAVEL, gray, medium to coarse, some fine- to coarse-grained sand, few cobbles, dense, wet.
		D&M		80	43			
20.0								
		D&M		80	55			

17.0 ▽ 1041.9

20.5 1038.4

Boring completed at 20.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

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BORING NUMBER SB-23

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/13/09 COMPLETED 2/13/09 GROUND ELEVATION 1059.30 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING 17.0 ft / Elev 1042.3 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5						SP		SAND, brown, fine-grained, some fine to medium gravel, loose, damp.
3.0								1056.3
5.0		D&M	SB23-S1	55	6			MUNICIPAL SOLID WASTE, soil/decomposable (95% by volume), glass, plastic, paper, loose to very loose, moist.
5.0								@ 5 feet: Soil/decomposable (65% by volume), plastic, glass, paper.
7.0								1052.3
7.5								SILTY SAND, gray, fine-grained, some fines, little fine gravel, loose, moist.
10.0						SM		
10.0		D&M	SB23-S4	60	7			
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.

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BORING NUMBER SB-23

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M	SB23-S5	100	15	SM		SILTY SAND, gray, fine-grained, some fines, little fine gravel, loose, moist. (continued)
15.0								
		D&M	SB23-S6	100	33			SANDY GRAVEL, gray, fine to coarse, some medium- to coarse-grained sand, few cobbles, medium dense to dense, moist.
17.5								
		D&M	SB23-S7	60	88	GW		▽ @17.5 feet: increased cobbles, becomes wet.
20.0								
		D&M			51			

Boring completed at 20.5 feet.

1038.8

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

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BORING NUMBER SB-24

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/13/09 COMPLETED 2/13/09 GROUND ELEVATION 1058.79 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
						SP		SAND, dark brown, fine-grained, moist.
								1.5 1057.3 WOOD WASTE, mixed with gray, fine-grained silty sand, little fine gravel, few cobbles, loose to medium dense, moist.
2.5		D&M	SB24-S1	85	3			
5.0		D&M	SB24-S2	66	8			
7.5		D&M	SB24-S3	85	8			7.0 1051.8 MUNICIPAL SOLID WASTE, soil/decomposable (40% by volume), wood, plastic, cloth/fiber, layers of brown, fine-grained sand with few cobbles, loose to medium dense, moist.
10.0		D&M	SB24-S4	66	14			@ 10.0 feet: Plastic, paper, wood, soil/decomposable (10% by volume), loose, moist.
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-25

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/13/09 COMPLETED 2/13/09 GROUND ELEVATION 1058.01 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
						SP		SAND, brown, fine-grained, moist.
								1056.5
2.5								
		D&M	SB25-S1	15	8			
						SM		SILTY SAND, dark brown, fine-grained, some fines, little medium-grained gravel, little wood waste, loose to very loose, moist.
5.0								
		D&M	SB25-S2	10	5			
7.5								
		D&M	SB25-S3	15	8			MUNICIPAL SOLID WASTE, Fiber, plastic, glass, soil/decomposable (10% by volume), loose, moist.
								1051.0
10.0								
		D&M	SB24-S4	25	15			@ 10.0 feet: Fiber, paper, soil/decomposable (25% by volume), loose, moist.
12.5								
		D&M	SB25-S5		17			@ 12.5 feet: Fabric, soil/decomposable (25% by volume), medium dense, moist.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR SB LOG YAKIMA SOIL BORINGS GPJ GINT US GDT 4/13/09



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
	X							MUNICIPAL SOLID WASTE, Fiber, plastic, glass, soil/decomposable (10% by volume), loose, moist. (continued)
15.0							14.5	1043.5
	X	D&M			50/5"	SW		GRAVELLY SAND, gray, fine to coarse, some fine- to coarse-grained gravel, very dense, moist.
							15.5	1042.5
Boring completed, refusal at 15.5 feet.								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.

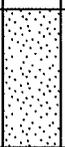
SLR SB LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/13/09

Figure H-25(Page 2 of 2)



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/13/09 COMPLETED 2/13/09 GROUND ELEVATION 1058.50 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING 14.5 ft / Elev 1044.0 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
						SP		SAND, brown, fine-grained, little fine to medium gravel, moist.
								1.5 ----- 1057.0
2.5		D&M	SB26-S1	50	6	SM		SILTY SAND, gray, fine-grained, some fines, little fine to coarse gravel, trace municipal solid waste, loose, moist.
								4.5 ----- 1054.0
5.0		D&M	SB26-S2	50	6			MUNICIPAL SOLID WASTE, Soil (60% by volume), wood, plastic, loose, moist.
7.5		D&M	SB26-S3	75	8			@ 7.5 feet: Soil (50% by volume), wood, plastic, loose, moist.
10.0		D&M	SB26-S4	66	4			@ 10.0 feet: Soil (75% by volume), wood, plastic, moist.
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09



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BORING NUMBER SB-27

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CLIENT <u>City of Yakima</u>	PROJECT NAME <u>Former City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>2/17/09</u> COMPLETED <u>2/17/09</u>	GROUND ELEVATION <u>1063.45 ft</u> HOLE SIZE <u>8.5" Diameter</u>
DRILLING CONTRACTOR <u>Cascade Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	AT TIME OF DRILLING <u>Dry</u>
LOGGED BY <u>C. Lee</u> CHECKED BY _____	AT END OF ---
NOTES _____	AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5								WOOD WASTE, few fine gravel, very dense.
5.0		D&M	SB27-S1	100	50/5"			
7.5		D&M	SB27-S2	80	21			
10.0		D&M	SB27-S3	50	33			@ 7.5 feet: Wood, soil/decomposable (30% by volume), paper, plastic, glass, moist.
12.5		D&M	SB27-S4	66	10			@ 10.0 feet: Paper, soil/decomposable (40% by volume), plastic, glass, loose, moist.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

☑ Water level at time of drilling.

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BORING NUMBER SB-27

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M	SB27-S5	100	4			@ 12.5 feet: Plastic, glass, very loose.
								1050.5
						SM		SILTY SAND, gray, fine-grained, some fines, some bark, very loose to very dense, wet.
15.0		D&M	SB27-S6	100	50/5"			
								1046.5
17.5		D&M	SB27-S7	66	50/6"			
						GW		SANDY GRAVEL, fine to coarse, some fine- to medium-grained sand, very dense, moist.
20.0		D&M		0	50/6"			
								20.5

Boring completed at 20.5 feet.

1043.0

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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Figure H-27 (Page 2 of 2)



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/18/09 COMPLETED 2/18/09 GROUND ELEVATION 1060.00 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 13.5 ft / Elev 1046.5 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5								WOOD WASTE, bark mulch, some fine to coarse gravel, dry to damp.
3.0								1057.0
5.0		D&M		70	19			SILTY GRAVEL, dark gray, fine to coarse, some silt, little fine- to coarse-grained sand, medium dense, moist, odor.
5.5						GW-GM		1054.5
7.5		D&M		66	10			MUNICIPAL SOLID WASTE, Wood, paper, glass, loose to dense.
7.5								@ 7.5 feet: Wood, paper, soil/decomposable (10% by volume), medium dense.
10.0		D&M		40	16			@ 10.0 feet: Cobble caught in sampler, trace municipal solid waste in sampler, dense.
12.5		D&M		30	50			1048.0
12.5								SANDY GRAVEL, olive gray, fine to coarse, well-rounded to flattened, some fine- to coarse-grained sand, medium dense, moist to wet.
12.5						GP		∇

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
	X					GP		14.0

1046.0

Boring completed at 14.0 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-29

CLIENT <u>City of Yakima</u>	PROJECT NAME <u>Former City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>2/19/09</u> COMPLETED <u>2/19/09</u>	GROUND ELEVATION <u>1068.95 ft</u> HOLE SIZE <u>8.5" Diameter</u>
DRILLING CONTRACTOR <u>Cascade Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	AT TIME OF DRILLING <u>Dry</u>
LOGGED BY <u>B. Robinson</u> CHECKED BY _____	AT END OF ---
NOTES _____	AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5		D&M	SB29-S1	100	14			WOOD WASTE, bark mulch and wood fragments, trace fine to medium gravel, loose to medium dense, moist.
5.0		D&M	SB29-S2	85	21			
7.5								MUNICIPAL SOLID WASTE, gravel, paper, plastic.
8.0		D&M		80	22			WOOD WASTE, bark and sawdust, medium dense, moist.
10.0		D&M		5	26			@ 10.0 feet: Plastic caught in sampler.
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.

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CLIENT City of Yakima **PROJECT NAME** Former City of Yakima Landfill
PROJECT NUMBER 001.0221.00004 **PROJECT LOCATION** Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M	SB29-S3	60	23			WOOD WASTE , bark and sawdust, medium dense, moist. <i>(continued)</i>
15.0								
		D&M	SB29-S4	60	16			
17.5								
		D&M		33	34			
20.0								
		D&M	SB29-S5	66	31			
						SM		
								21.0 1048.0
								21.5 1047.5

Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/19/09 COMPLETED 2/19/09 GROUND ELEVATION 1066.98 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5								WOOD WASTE , mulch and woodchips, some sand, some fine to medium gravel, medium dense, dry to damp.
5.0		D&M	SB30-S1	90	17			
7.5								@ 5.0 feet: Little silty sand.
8.0		D&M		80	12			MUNICIPAL SOLID WASTE , olive gray silty sand, plastic, paper, loose. 1059.0
9.5								WOOD WASTE , loose to medium dense. 1057.5
10.0		D&M		33	7			
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.

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BORING NUMBER SB-30

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M	SB30-S3	66	9			WOOD WASTE, loose to medium dense. (continued)
15.0								
		D&M		50	40			@ 16.0 feet: 4" piece of wood in sampler.
17.5								
		D&M		30	16			
20.0								
		D&M	SB30-S4	100	12	ML		20.5 1046.5 SANDY SILT, olive brown to olive gray, some fine- to medium-grained sand, trace gravel, stiff, moist.
								21.5 1045.5

Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/19/09 COMPLETED 2/19/09 GROUND ELEVATION 1063.77 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5						GM		SILTY GRAVEL, dark brown, fine to coarse, angular to rounded, little fine- to coarse-grained sand, little wood waste, dense, moist. From 2.0 to 2.5 feet: Wet.
3.5								WOOD WASTE. 1060.3
4.5								SILTY GRAVEL, olive gray, fine to coarse, rounded, trace glass, very dense to medium dense. 1059.3
5.0	X	D&M	SB31-S1	100	43			
7.5	X	D&M		50	50/4"	GM		
8.5	X	D&M		5	13			MUNICIPAL SOLID WASTE, medium dense. 1055.3
10.0	X	D&M		0	24			
12.5	X	D&M		30	19			@ 12.0 feet: Becomes wet. @ 12.5 feet: Wood, paper, silty sand (25% by volume), plastic, medium dense, wet, seen on sample.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
	X							MUNICIPAL SOLID WASTE, medium dense. (continued)
15.0								SILTY SAND, grayish brown, fine-grained, some fines, moist, layers of bark.
	X	D&M	SB31-S2	100	7	SM		
17.5	X	D&M			50/5"			@ 17.5 feet: Broken cobble in sampler, no recovery.
								

Boring completed at 18.0 feet. 1045.8

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

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BORING NUMBER SB-32

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/19/09 COMPLETED 2/19/09 GROUND ELEVATION 1062.60 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								WOOD WASTE, little gravel, moist.
2.5								
3.0						GM		1059.6 SILTY GRAVEL, olive gray, fine to coarse, rounded, some fines, little sand, medium dense, damp.
3.5		D&M	SB32-S1	100	36			1059.1 MUNICIPAL SOLID WASTE, paper and decomposables (70% by volume), some silty sand, loose to medium dense.
5.0								@ 5.0 feet: Soil/decomposable (95% by volume), metal, glass, loose.
7.5		D&M	SB32-S2	66	8			@ 7.5 feet: Wood in sampler shoe, no recovery, medium dense.
10.0								@ 10.0 feet: Cobble in sampler, no recovery, medium dense.
12.5		D&M			5			

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-32

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CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
	X	D&M		0	50/5"			MUNICIPAL SOLID WASTE , paper and decomposables (70% by volume), some silty sand, loose to medium dense. <i>(continued)</i> @ 12.5 feet: Wood fragment in sampler, no recovery, very dense.
15.0								
	X	D&M	SB32-S3	10	78			@ 15.0 feet: Soil/decomposable (50% by volume), wood, paper, very dense.
17.5								
	X	D&M		30	61	GW		SANDY GRAVEL , olive gray, fine to coarse, some fine- to coarse-grained sand, very dense, damp.

Boring completed at 19.0 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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Figure H-32(Page 2 of 2)



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BORING NUMBER SB-33

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/19/09 COMPLETED 2/19/09 GROUND ELEVATION 1063.90 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING ---
 LOGGED BY B. Robinson CHECKED BY --- AT END OF ---
 NOTES --- AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								WOOD WASTE, bark, wood mulch, some fine to coarse gravel, medium dense, moist.
2.5		D&M	SB33-S1	100	16			
5.0		D&M	SB33-S2	80	50/5"			
7.5		D&M		20	36	GP-GM		SILTY GRAVEL, olive gray, well-rounded, little cobbles, little silt, dense to medium dense, moist.
10.0		D&M	SB33-S3	40	4			MUNICIPAL SOLID WASTE, Soil (60% by volume), wood, paper, metal, plastic, loose to medium dense.
12.5		D&M	SB33-S4	33	7			@ 12.5 feet: Soil (50% by volume), paper, metal, plastic, rubber.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
15.0								MUNICIPAL SOLID WASTE , Soil (60% by volume), wood, paper, metal, plastic, loose to medium dense. <i>(continued)</i>
		D&M	SB33-S5	33	33			@ 15.0 feet: Soil/decomposable (90% by volume), glass, plastic.
17.5								@ 17.5 feet: Tire caught in sampler, no recovery.
		D&M		5	23			
20.0								SANDY GRAVEL observed on sampler, no recovery.
		D&M		0	63	GW		@ 20.0 feet: Very difficult drilling.
								Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/20/09 COMPLETED 2/20/09 GROUND ELEVATION 1061.41 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 18.0 ft / Elev 1043.4 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								WOOD WASTE, wood chips, mulch, some fine to medium gravel.
2.5								
3.0		D&M	SB34-S1	100	50	GW-GM		SILTY GRAVEL, olive brown, fine to coarse, well-rounded, some fines, little fine-to coarse-grained sand, dense. 1058.4
5.0								
5.5		D&M		80	31			WOOD WASTE, mulch. 1055.9
6.0						GM		SILTY GRAVEL, olive gray, angular to rounded, some fines, little sand, dense, damp. 1055.4
7.5								
7.5		D&M		40	9			MUNICIPAL SOLID WASTE, Soil/decomposable (95% by volume), glass, plastic, loose to very dense, moist. 1054.4
10.0		D&M	SB31-S2	55	19			@ 10.0 feet: Soil/decomposable (50% by volume), bricks, metal, plastic, medium dense.
12.5		D&M		50	50/6"			@ 12.5 feet: Soil/decomposable (90% by volume), glass.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR SB LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 4/13/09



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BORING NUMBER SB-34

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
15.0								MUNICIPAL SOLID WASTE, Soil/decomposable (95% by volume), glass, plastic, loose to very dense, moist. (continued)
	X	D&M		0	19			
17.5								@ 17.5 feet: Metal and large cobble caught in sampler, limited recovery. 1043.4
	X	D&M		20	50/6"			
20.0						GW		SANDY GRAVEL, olive gray, fine to coarse, some fine- to coarse-grained sand, few cobbles, dense, wet. 1039.9
	X	D&M		20	39			
								Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

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BORING NUMBER SB-35

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/20/09 COMPLETED 2/20/09 GROUND ELEVATION 1060.03 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING 18.0 ft / Elev 1042.0 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								WOOD WASTE, mulch, wood chips and bark, trace gravel.
2.5								
	X	D&M	SB35-S1	90	15			
5.0								
	X	D&M		10	50/5"			@ 5.5 feet: Broken cobble in sampler, limited recovery.
6.5						GM		1053.5 SILTY GRAVEL, based on cuttings.
7.0								1053.0 MUNICIPAL SOLID WASTE, Soil/decomposable (90% by volume), glass, plastic, moist, medium dense to loose.
7.5								
	X	D&M		15	58			
10.0								@ 10.0 feet: No recovery.
	X	D&M		0	23			
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09



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 Bothell, Washington 98021
 Telephone: 425.402.8800
 SLR International Corp Fax: 425.402.8488

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M	SB35-S2	66	6			MUNICIPAL SOLID WASTE , Soil/decomposable (90% by volume), glass, plastic, moist, medium dense to loose. <i>(continued)</i> @ 12.5 feet: Soil/decomposable (90% by volume), paper, plastic, glass, moist.
15.0								
		D&M		20	10			@ 15 feet: Soil/decomposable (80% by volume), paper, wood, plastic, metal, glass, moist.
17.5								
		D&M	SB35-S3	80	38			
								18.0 ▽ 1042.0
20.0								
		D&M		50	27	GW		SANDY GRAVEL , olive gray, fine to coarse, rounded, some fine- to coarse-grained sand, trace silt, medium dense, wet.
								21.5 1038.5

Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

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BORING NUMBER SB-36

CLIENT <u>City of Yakima</u>	PROJECT NAME <u>Former City of Yakima Landfill</u>
PROJECT NUMBER <u>001.0221.00004</u>	PROJECT LOCATION <u>Yakima, Washington</u>
DATE STARTED <u>2/20/09</u> COMPLETED <u>2/20/09</u>	GROUND ELEVATION <u>1059.20 ft</u> HOLE SIZE <u>8.5" Diameter</u>
DRILLING CONTRACTOR <u>Cascade Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	AT TIME OF DRILLING <u>---</u>
LOGGED BY <u>B. Robinson</u> CHECKED BY _____	AT END OF <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5		D&M		90	8			WOOD WASTE, some silt, some sand, loose, moist.
5.0		D&M	SB36-S1	100	20			
6.0						ML		SANDY SILT, olive gray, some fine-grained sand, stiff, damp. 1053.2
7.0								MUNICIPAL SOLID WASTE, Soil/decomposable (90% by volume), glass, plastic, loose to medium dense. 1052.2
7.5		D&M	SB36-S2	30	8			
10.0		D&M		0	4			@ 10.0 feet: No recovery.
12.5		D&M		5	6			@ 12.5 feet: Soil/decomposable (100% by volume), loose.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

SLR SB LOG YAKIMA SOIL BORINGS: GPJ GINT US.GDT 3/25/09



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
15.0	X							MUNICIPAL SOLID WASTE , Soil/decomposable (90% by volume), glass, plastic, loose to medium dense. <i>(continued)</i>
	X	D&M	SB36-S3	30	19			@ 15.0 feet: Soil/decomposable (100% by volume), medium dense.
17.5	X	D&M		20	50/5"	SM		SILTY SAND , olive gray, fine-grained, some fines, little wood, very dense, moist.
								Boring completed, refusal at 18.0 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

SLR SB LOG YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/25/09

Figure H-36(Page 2 of 2)



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BORING NUMBER SB-37

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/20/09 COMPLETED 2/20/09 GROUND ELEVATION 1063.93 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING Dry
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5								WOOD WASTE, wood mulch and bark, some fine- to coarse-grained sand, some fine to coarse gravel, medium dense.
5.0		D&M	SB37-S1	100	21			
5.5						ML		1058.4 SANDY SILT, olive gray, some fine- to coarse-grained sand, little fine to coarse gravel, few wood and bark, stiff, moist.
7.0								1056.9 MUNICIPAL SOLID WASTE, soil/decomposable (80% by volume), gravel, glass, plastic, medium dense, moist.
7.5		D&M		20	18			
10.0		D&M		0	19			@ 10.0 feet: No recovery.
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

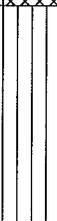
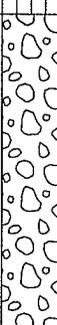
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BORING NUMBER SB-37

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
	X	D&M	SB37-S3	30	19			MUNICIPAL SOLID WASTE , soil/decomposable (80% by volume), gravel, glass, plastic, medium dense, moist. <i>(continued)</i> @12.5 feet: soil/decomposable (50% by volume), paper, metal, glass, medium dense, moist.
14.5								1049.4
15.0								
	X	D&M	SB37-S4	100	5	ML		SANDY SILT , olive gray, some fine- to coarse-grained sand, few wood, soft, moist.
17.0								1046.9
17.5								
	X	D&M		100	50/5"			SANDY GRAVEL , olive gray, fine to coarse, some fine- to coarse-grained sand, few cobbles, well rounded, very dense, moist.
20.0								
	X	D&M		50	50/5"			
20.5								1043.4

Boring completed at 20.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09

Figure H-37 (Page 2 of 2)



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BORING NUMBER SB-38

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/20/09 COMPLETED 2/20/09 GROUND ELEVATION 1062.63 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING 19.0 ft / Elev 1043.6 ft
 LOGGED BY B. Robinson CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5								WOOD WASTE , woodchips and bark mulch, some sand and gravel, loose to medium dense, moist.
5.0		D&M		100	13			
6.0		D&M		33	43			GRAVELLY SILT , olive gray, fine to medium gravel, angular to rounded, little sand, hard, moist. 1056.6
7.5		D&M		20	50/0"	ML		
9.0								MUNICIPAL SOLID WASTE silty gravel, plastic, tires, metal, soil/decomposable (<5% by volume), loose, moist. 1053.6
10.0		D&M		60	6			
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09



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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/23/09 COMPLETED 2/23/09 GROUND ELEVATION 1061.64 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING 19.5 ft / Elev 1042.1 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								
2.5								WOOD WASTE, trace fine gravel, very dense.
5.0		D&M	SB39-S1	100	50/6"			
7.5								
5.0		D&M	SB39-S2	50	14	ML		GRAVELLY SILT, gray, some fine gravel, little fine-grained sand, trace wood waste, stiff, moist.
7.5		D&M		0	10			MUNICIPAL SOLID WASTE, very loose to loose. @ 7.5 feet: No recovery, waste in cuttings.
10.0		D&M	SB39-S3	10	4			@ 10.0 feet: Wood, soil/decomposable (20% by volume), plastic, glass, very loose.
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

Water level at time of drilling.

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CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M	SB39-S4	10	13			MUNICIPAL SOLID WASTE , very loose to loose. <i>(continued)</i> @ 12.5 feet: Soil/decomposable (40% by volume), wood, plastic, loose.
15.0								
		D&M		0	15			@ 15 feet: No recovery, waste in cuttings.
17.5								
		D&M	SB39-S5	50	81			GRAVELLY SAND , gray, fine- to medium-grained, some fine to medium gravel, little fractured cobbles, moist.
20.0								
		D&M		60	62	SP		▽ @ 19.5 feet: Becomes wet.

Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09



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BORING NUMBER SB-40

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/23/09 COMPLETED 2/23/09 GROUND ELEVATION 1060.15 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 19.5 ft / Elev 1040.7 ft
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								WOOD WASTE, trace fine gravel, moist.
2.5								
		D&M	SB40-S1	80	49			
						ML		GRAVELLY SILT, gray, some fine gravel, few cobbles, little fine to medium sand, hard, moist.
								1056.7
								1055.7
5.0		D&M		0	50/4"			MUNICIPAL SOLID WASTE, very dense to loose.
								@ 5.0 feet: No recovery, waste in cuttings.
7.5		D&M		0	50/5"			@ 7.5 feet: No recovery, waste in cuttings, steel can blocking sampler.
10.0		D&M	SB40-S2	10	13			@ 10.0 feet: Metal, wood, soil/decomposable (20% by volume), loose.
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09



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BORING NUMBER SB-40

PAGE 2 OF 2

CLIENT City of Yakima

PROJECT NAME Former City of Yakima Landfill

PROJECT NUMBER 001.0221.00004

PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
		D&M	SB40-S3	33	8			MUNICIPAL SOLID WASTE , very dense to loose. <i>(continued)</i> @ 12.5 feet: Wood, soil/decomposable (40% by volume), plastic, glass, loose.
15.0								
		D&M	SB40-S4	50	9	ML		SANDY SILT , gray, some fine-grained sand, medium stiff, moist.
17.5								
		D&M	SB40-S5	100	27			SANDY GRAVEL , gray, fine to medium, some fine to medium sand, little silt, medium dense, moist.
20.0								
		D&M		70	24	GW		▽ @ 19.5 feet: Becomes wet.
21.5								

Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

▽ Water level at time of drilling.

SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09



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BORING NUMBER SB-41

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington
 DATE STARTED 2/23/09 COMPLETED 2/23/09 GROUND ELEVATION 1064.60 ft HOLE SIZE 8.5" Diameter
 DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger AT TIME OF DRILLING Dry
 LOGGED BY C. Lee CHECKED BY _____ AT END OF _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0								WOOD WASTE.
1.5								1063.1 SILTY SAND, gray, fine-grained, some fines, little fine gravel, medium dense, moist.
2.5		D&M	SB41-S1	66	20	SM		
5.0		D&M	SB41-S2	33	22			
7.0								1057.6 MUNICIPAL SOLID WASTE, medium dense to loose. @ 7.5 feet: No recovery, waste in cuttings.
7.5		D&M		0	13			
10.0		D&M		0	17			@ 10.0 feet: No recovery, waste in cuttings, gas venting from auger stem.
12.5								

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

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BORING NUMBER SB-41

CLIENT City of Yakima PROJECT NAME Former City of Yakima Landfill
 PROJECT NUMBER 001.0221.00004 PROJECT LOCATION Yakima, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5								
	X	D&M	SB41-S3	20	6			MUNICIPAL SOLID WASTE , medium dense to loose. <i>(continued)</i> @ 12.5 feet: soil/decomposable (40% by volume), wood, plastic, loose.
15.0								
	X	D&M		0	13			
17.5								
	X	D&M		0	15			@ 17.5 feet: No recovery, drilling action indicated municipal solid waste, loose.
20.0								
	X	D&M	SB41-S4	30	55	SM		SILTY SAND , gray, fine-grained, some fines, little fine to medium gravel, dense, moist.

19.5 ----- 1045.1

21.5 ----- 1043.1

Boring completed at 21.5 feet.

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. autohammer with a 24-inch drop.

∇ Water level at time of drilling.

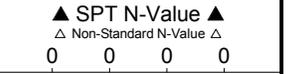
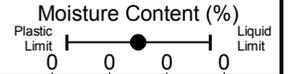
SLR GENERAL YAKIMA SOIL BORINGS.GPJ GINT US.GDT 3/20/09

FPP-B01

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0	FPP-B01-S(0.5-1)	d3		0	(Pattern: small circles)	GP-GM	Gray, sandy GRAVEL with silt (slight petroleum-like odor, no sheen) (loose, dry) (FILL)
5				0	(Pattern: larger circles)	GP	Mottled, gray to brown, coarse GRAVEL with sand and cobbles (no odor, no sheen) (loose, dry)
15	FPP-B01-S(12-13)	d3		0	(Pattern: vertical lines)	SP-SM	Brown, very gravelly medium to coarse SAND with silt (no odor, no sheen) (loose, wet) (ALLUVIUM)

Groundwater

15.0 ft A.T.D. 13.0 ft During Groundwater Sample Collection

Boring Completed 06/18/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466690.12
East: 1640805.96

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
Yakima, WA

Log of Boring FPP-B01

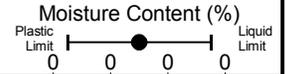
Figure
H-42

FPP-B02

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



▲ SPT N-Value ▲
△ Non-Standard N-Value △
0 0 0 0

× Fines Content (%) ×
0 0 0 0

Drilling Method: Geoprobe™

Ground Elevation (ft): Not surveyed

Drilled By: Cascade Drilling Inc.

Logged By: SDS Date: 06/19/13

Groundwater

15.0 ft Boring Groundwater Sample Collection

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0	FPP-B02 -S(1-2)	d3	0		GP-GM	GP-GM	Dark brown, very sandy GRAVEL with silt (slight petroleum-like odor, no sheen) (loose, dry) (FILL)
5			0		GP	GP	Mottled gray to brown coarse GRAVEL with sand and cobbles (no odor, no sheen) (loose, dry)
15	FPP-B02 -S(14-15.5)	d3	0		SP-SM	SP-SM	Dark gray to brown, gravelly fine to coarse SAND with silt (slight petroleum-like odor, no sheen) (loose, damp) (ALLUVIUM)
20					GP-GM	GP-GM	-grades sandy GRAVEL with silt (no odor, no sheen) (loose, wet)

Boring Completed 06/19/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466656.47
East: 1640829.33

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
Yakima, WA

Log of Boring FPP-B02

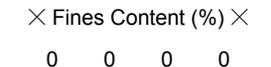
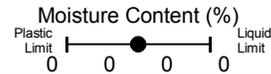
Figure
H-43

FPP-B03

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0	FPP-B03-S(0.5-2)	d3		0	(Pattern of small circles)	GP	Brown, sandy fine to coarse GRAVEL (no odor, no sheen) (loose, dry) (FILL)
5				0.6	(Pattern of small circles)	GP	Brown to gray, sandy, fine to coarse GRAVEL (no odor, no sheen) (loose, dry)
15	FPP-B03-S(13-14)	d3		0.4	(Pattern of small circles)		

Groundwater
 15.0 ft ATD 13.0 ft During Groundwater Sample Collection

Boring Completed 06/18/13
 Total Depth of Boring = 15.0 ft.

Point located at State Plane Coordinates:
 North: 466624.01
 East: 1640833.71

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B03

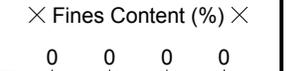
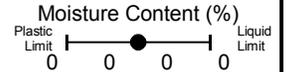
Figure
H-44

FPP-B04

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0						GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (medium dense, damp) (FILL)
0.1						GP	Gray to green sandy GRAVEL (no odor, no sheen) (medium dense, dry)
0						PC	Crushed concrete (loose, dry)
0						GP	Gray to green, sandy GRAVEL (petroleum-like odor, no sheen) (medium dense, dry)
0	FPP-B04-S(11-12)	d3	0			SP	Dark gray to green very gravelly fine to coarse SAND (petroleum-like odor, sheen) (loose, dry) -Green soil staining -grades sandy GRAVEL (petroleum-like odor, sheen) (loose, dry)
0						SP	Dark gray, gravelly fine to coarse SAND (no odor, no sheen) (loose, wet) (ALLUVIUM) -grades to very sandy GRAVEL with native wood debris (roots, bark)
0	FPP-B04-S(21-22)	d3	0			GP-GM	Dark brown, woody, very sandy GRAVEL with silt (no odor, no sheen) (loose, wet)
0						WD	Brown native woody debris(roots, bark) (no odor, no sheen) (loose, wet)

Groundwater
13.0 ft Boring Groundwater Sample Collection

Boring Completed 06/18/13
 Total Depth of Boring = 25.0 ft
 Point located at State Plane Coordinates:
 North: 466815.05
 East: 1641066.03

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B04

Figure
H-45

FPP-B05

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE

Moisture Content (%)			
Plastic Limit	0 0 0 0		Liquid Limit
▲ SPT N-Value ▲			
△ Non-Standard N-Value △			
× Fines Content (%) ×			
0 0 0 0			

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description
0						SP-SM	Brown, gravelly, fine to medium SAND with silt (no odor, no sheen) (loose, damp)
0						GP	(FILL) Blue-gray, sandy GRAVEL (petroleum-like odor, no sheen) (loose, dry)
0				0			
0				0		SP	Dark gray, fine to coarse SAND with gravel (petroleum-like odor, sheen) (loose, damp) (ALLUVIUM)
15	FPP-B05-S(15-16.5)	d3		1.7			-green to yellow oily substance in core tube between 15 and 17 ft
20	FPP-B05-S(22.5-24)	d3		0.5		GP-GM	Dark gray, sandy GRAVEL with silt (no odor, no sheen) (loose, wet)
25							

Groundwater

13.0 ft During Groundwater Sample Collection

15.5 ft ATD

Boring Completed 06/19/13
Total Depth of Boring = 25.0 ft

Point located at State Plane Coordinates:
North: 466791.56
East: 1641118.69

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B05

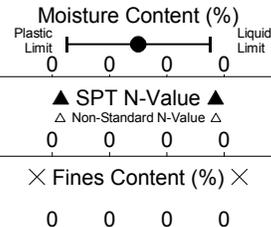
Figure
H-46

FPP-B06

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description
0						GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (loose, dry) (FILL)
5				0		SM	Brown, silty fine to medium SAND with gravel (no odor, no sheen) (medium dense, dry)
10				0		SP	Dark gray, gravelly fine to coarse SAND (no odor, no sheen) (loose, wet) (ALLUVIUM)
15	FPP-B06-S(15-16)	d3		0			-depth of lathe pit to north of boring is 13.3 feet -grades very sandy GRAVEL with silt (loose, wet) (no odor, no sheen)
20							

Groundwater
10.0 ft during Groundwater Sample Collection

Boring Completed 06/18/13
 Total Depth of Boring = 20.0 ft.
 Point located at State Plane Coordinates:
 North: 466743.99
 East: 1641075.37

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B06

Figure
H-47

FPP-B07

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE

Moisture Content (%)			
Plastic Limit	0	0	Liquid Limit
▲ SPT N-Value ▲			
△ Non-Standard N-Value △			
× Fines Content (%) ×			
0	0	0	0

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description
0	FPP-B07-S(0.5-1.5)			0.5	SP		Green to gray gravelly fine to coarse SAND (petroleum-like odor, no sheen) -green staining (loose, dry)
					WD		(FILL) Brown WOODWASTE material (no odor, no sheen) (loose, wet)
5				0			
10					SP-SM		Dark gray, gravelly fine SAND with silt (slight petroleum-like odor, no sheen) (medium dense, wet) (ALLUVIUM)
15	FPP-B07-S(15-16)			0.3			-grades dark gray, gravelly fine to medium SAND with silt (medium dense, wet)
20							

Groundwater

13.0 ft Boring Groundwater Sample Collection

Boring Completed 06/19/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466954.12
East: 1641303.35

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B07

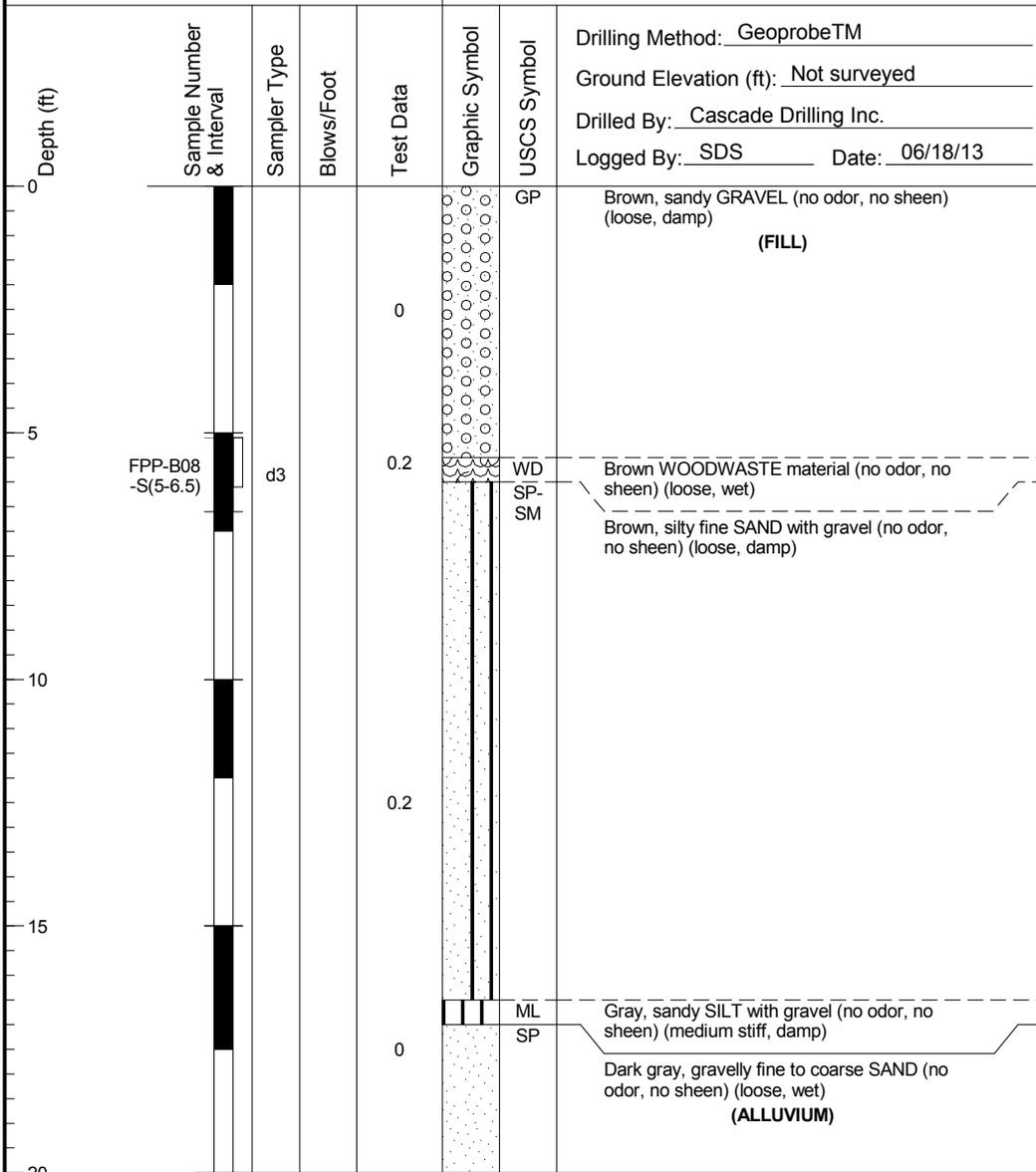
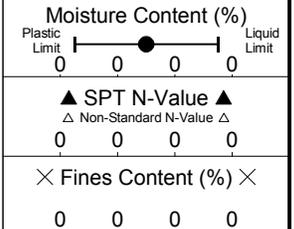
Figure
H-48

FPP-B08

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Groundwater
 13.0 ft
 Groundwater Sample Collection

Boring Completed 06/18/13
 Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
 North: 466739.19
 East: 1641203.73

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
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Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B08

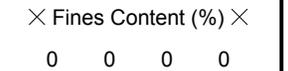
Figure
H-49

FPP-B09

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	SAMPLE DATA				SOIL PROFILE		Groundwater
	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	
0							
0 - 12.3	FPP-B09-S(12-13)					SP-SM	Drilling Method: Geoprobe™ Ground Elevation (ft): Not surveyed Drilled By: Cascade Drilling Inc. Logged By: SDS Date: 06/19/13 Brown, gravelly fine to medium SAND with silt (slight petroleum-like odor, no sheen) (loose, damp) (FILL)
12.3 - 14.0			0.3			GP-GM	Brown, sandy GRAVEL with silt (slight petroleum-like odor, no sheen) (medium dense, damp)
14.0 - 20.0						SP-SM	Dark gray, gravelly fine to coarse SAND with silt (no odor, no sheen) (loose, wet) (ALLUVIUM)
20.0 - 23.0						SP	Dark gray, fine to coarse SAND with gravel (no odor, no sheen) (loose, wet)

14.0 ft Boring Groundwater Sample Collection

Boring Completed 06/19/13
Total Depth of Boring = 23.0 ft.

Point located at State Plane Coordinates:
North: 466628.15
East: 1641025.81

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B09

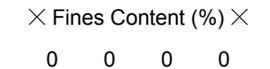
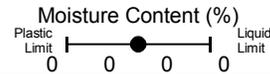
Figure
H-50

FPP-B10

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0						GP	Gray pea GRAVEL (no odor, no sheen) (loose, damp)
						GP-GM	(FILL) Mottled, gray to brown sandy coarse GRAVEL with silt and cobbles (no odor, no sheen) (loose, dry)
10	FPP-B10-S(10-11)	d3	0	0		SP	Blue-gray, fine to medium SAND with gravel (petroleum-like odor, slight sheen) (loose, damp)
15	FPP-B10-S(15-16)	d3	0	0		SP-SM	Dark gray, gravelly fine to coarse SAND with silt (no odor, no sheen) (loose, wet)
						ML	Gray, sandy SILT with woody debris (no odor, no sheen) (medium stiff, wet)
						SP-CL	Dark gray, gravelly fine to coarse SAND (no odor, no sheen) (loose, wet)
							(ALLUVIUM) Brown, sandy CLAY (no odor, no sheen) (stiff, wet)

15.0 ft AT 13.5 ft During Groundwater Sample Collection

Boring Completed 06/18/13
Total Depth of Boring = 20.0 ft.
Point located at State Plane Coordinates:
North: 466592.82
East: 1640969.10

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B10

Figure
H-51

FPP-B11

LAI Project No: 1148007.010

SAMPLE DATA				SOIL PROFILE		Groundwater
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Graphic Symbol	USCS Symbol	
0						Moisture Content (%) Plastic Limit: 0 0 0 0 Liquid Limit: 0 0 0 0 ▲ SPT N-Value ▲ △ Non-Standard N-Value △ × Fines Content (%) × 0 0 0 0
					Drilling Method: Geoprobe™ Ground Elevation (ft): Not surveyed Drilled By: Cascade Drilling Inc. Logged By: SDS Date: 06/18/13	
0 - 5				(Stippled)	SP	Brown, gravelly, fine to coarse SAND (no odor, no sheen) (loose, dry) (FILL)
5 - 6				(Stippled)	SP	Gray to brown, mottled, gravelly, fine to coarse SAND with cobbles (no odor, no sheen) (loose, dry)
6 - 7				(Stippled with circles)	GP	Blue-gray GRAVEL with sand (no odor, no sheen) (loose, dry)
7 - 8			0	(Stippled)	SP	Gray to brown, mottled, gravelly, fine to coarse SAND with cobbles (petroleum-like odor, no sheen) (medium dense, dry) -black staining -grades with silt
8 - 9			0	(Stippled)	SP	
9 - 10				(Stippled)	SP-SM	
10 - 11				(Stippled)	SP-SM	Gray, gravelly fine to coarse SAND with silt (no odor, no sheen) (medium dense, damp)
11 - 12			0	(Stippled)	SP-SM	
12 - 13				(Stippled)	SP	Brown, gravelly fine to coarse SAND (no odor, no sheen) (dense, damp)
13 - 14				(Stippled)	SM	-grades silty
14 - 15				(Stippled)	SP	Dark gray, gravelly fine to coarse SAND (very slight petroleum-like odor, no sheen) (loose, wet) (ALLUVIUM)
15 - 16				(Stippled)	SP	
16 - 17				(Stippled)	SP	
17 - 18	FPP-B11-S(18-19)			(Stippled)	SP	
18 - 19				(Stippled)	SP	
19 - 20				(Stippled)	SP	
20 - 21				(Stippled)	SP	
21 - 22				(Stippled)	SP	
22 - 23	FPP-B11-S(22-23)			(Stippled)	SP	
23 - 24				(Stippled)	SP	
24 - 25				(Stippled)	SP	

14.0 ft During Groundwater Sample Collection

17.5 ft ATD

Boring Completed 06/18/13
 Total Depth of Boring = 25.0 ft
 Point located at State Plane Coordinates:
 North: 466613.31
 East: 1641046.66

- Notes:
- Stratigraphic contacts are based on field interpretations and are approximate.
 - Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 - Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B11

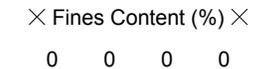
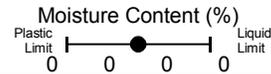
Figure
H-52

FPP-B12

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0							Drilling Method: Geoprobe™ Ground Elevation (ft): Not surveyed Drilled By: Cascade Drilling Inc. Logged By: SDS Date: 06/18/13
0 - 5						SP-SM	Brown, fine to medium SAND with gravel, with silt (no odor, no sheen) (loose, damp) (FILL)
5 - 6.7	FPP-B12-S(6-7)			0		GP-GM	Brown, very sandy GRAVEL with silt (no odor, no sheen) (loose, damp)
6.7 - 10						SP-SM	Gray, gravelly fine to coarse SAND with silt (no odor, no sheen) (loose, damp)

Groundwater
8.5 ft Drilling Groundwater Sample Collection

Boring Completed 06/18/13
Total Depth of Boring = 10.0 ft.

Point located at State Plane Coordinates:
North: 466624.35
East: 1641156.67

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B12

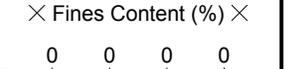
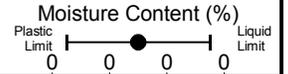
Figure
H-53

FPP-B13

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0						SP-SM	Brown, very gravelly fine to medium SAND with silt (no odor, no sheen) (loose, damp) (FILL)
5	FPP-B13-S(5.5-6.5)			0		GP-GM	Mottled, gray to brown, sandy, coarse GRAVEL with silt and cobbles (no odor, no sheen) (loose, dry)
10						SP-SM	Gray, gravelly, fine to coarse SAND with silt (no odor, no sheen) (loose, wet)
10						GP-GM	Mottled, gray to brown, sandy, coarse GRAVEL with silt and cobbles (no odor, no sheen) (loose, dry)
15	FPP-B13-S(12.5-14)			0		GM	Gray, sandy, silty GRAVEL (no odor, no sheen) (loose, wet)
15						CL	Dark gray, sandy CLAY (no odor, no sheen) (stiff, damp)
15						SP-SM	Dark gray, gravelly fine to coarse SAND with silt (no odor, no sheen) (loose, wet) (ALLUVIUM)

Groundwater

9.0 ft During Groundwater Sample Collection

14.5 ft ATD

Boring Completed 06/17/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466498.65
East: 1641113.39

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B13

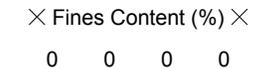
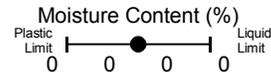
Figure
H-54

FPP-B14

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): Not surveyed Drilled By: Cascade Drilling Inc. Logged By: SDS Date: 06/17/13	Groundwater
0						GP	Brown, sandy GRAVEL with woodwaste (no odor, no sheen) (loose, dry) (FILL)	
0						SM GP	Black, silty fine SAND (no odor, no sheen) (dense, damp)	▼
0						GP	Light-gray, fine to coarse sandy GRAVEL (no odor, no sheen) (medium dense, dry) Mottled gray to brown sandy coarse GRAVEL with cobbles (no odor, no sheen) (loose, dry)	
0						GP	Blue-gray, sandy GRAVEL (no odor, no sheen) (medium dense, dry)	
0.3	FPP-B14-S(14-15)					SM	Dark gray, silty SAND (slight petroleum-like odor, no sheen) (medium dense, dry)	
0						GP	Mottled gray to brown sandy coarse GRAVEL with cobbles (no odor, no sheen) (loose, dry)	
0	FPP-B14-S(18.5-19.5)					SP	Dark gray, gravelly fine to coarse SAND (no odor, no sheen) (loose, damp)	
0						CL	Dark gray, silty CLAY with trace woodwaste and organics (no odor, no sheen) (medium stiff, damp)	▼

Boring Completed 06/17/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466411.53
East: 1640990.27

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B14

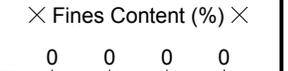
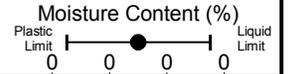
Figure
H-55

FPP-B15

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0						SP	Brown, fine to coarse SAND with gravel (no odor, no sheen) (loose, damp) (FILL)
0					CL	CL	Brown, sandy CLAY (no odor, no sheen) (stiff, damp)
0					SP-SM	SP-SM	Brown, fine to medium SAND with silt (no odor, no sheen) (loose, dry)
0					GP	GP	Gray, sandy GRAVEL (no odor, no sheen) (loose, dry)
0					SM	SM	Dark brown, silty fine SAND (no odor, no sheen) (medium dense, damp)
0					ML	ML	Brown, sandy SILT (no odor, no sheen) (stiff, damp)
0					SP	SP	(ALLUVIUM) Dark gray, gravelly fine to coarse SAND (no odor, no sheen) (medium dense, wet)

Groundwater

▼
▼

FPP-B15
-S(13.5-14.5)

Boring Completed 06/17/13
 Total Depth of Boring = 20.0 ft.
 Point located at State Plane Coordinates:
 North: 466441.36
 East: 1641092.05

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
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Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B15

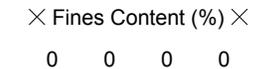
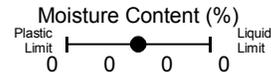
Figure
H-56

FPP-B16

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description
0						GP-GM	Gray, sandy GRAVEL with silt (no odor, no sheen) (loose, dry) (FILL)
0.3							
0.5						SP-SM	Dark brown, gravelly fine to medium SAND with silt (no odor, no sheen) (loose, dry)
10						GP	Blue-gray, sandy GRAVEL (no odor, no sheen) (loose, dry) -wet layer at 12 ft BGS
12.7	FPP-B16 -S(11.7-12.7)					CL-SP	Dark brown, sandy CLAY (no odor, no sheen) (stiff, damp) (ALLUVIUM)
15							Dark gray, gravelly fine to coarse SAND (no odor, no sheen) (loose, wet)
20							

Groundwater



Boring Completed 06/17/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466456.80
East: 1641237.41

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B16

Figure
H-57

FPP-B17

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE

Moisture Content (%)			
Plastic Limit	0 0 0 0		Liquid Limit
▲ SPT N-Value ▲			
△ Non-Standard N-Value △			
0 0 0 0			
× Fines Content (%) ×			
0 0 0 0			

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0							Drilling Method: Geoprobe™ Ground Elevation (ft): Not surveyed Drilled By: Cascade Drilling Inc. Logged By: SDS Date: 06/21/13
0.5 - 1.5	FPP-B17-S(0.5-1.5)			1.3	GP SP	GP SP	Brown sandy GRAVEL (no odor, no sheen) (loose, dry) (FILL) Brown to black gravelly SAND (faint petroleum-like odor, no sheen) (medium dense, damp)
5						SP	Gray, gravelly SAND (no odor, no sheen) (loose, dry)
10						GP	Mottled gray to brown sandy coarse GRAVEL with cobbles (no odor, no sheen) (loose, dry)
15						ML GP	Dark gray, sandy SILT with gravel (no odor, no sheen) (dense, damp) (ALLUVIUM) Dark gray, sandy GRAVEL (no odor, no sheen) (loose, damp)
16-17	FPP-B17-S(16-17)			0.5			
20							

Groundwater

▼
▼

Boring Completed 06/21/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466889.42
East: 1641135.63

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
Yakima, WA

Log of Boring FPP-B17

Figure
H-58

FPP-B18

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE

Moisture Content (%)			
Plastic Limit	0 0 0 0		Liquid Limit
▲ SPT N-Value ▲			
△ Non-Standard N-Value △			
0 0 0 0			
× Fines Content (%) ×			
0 0 0 0			

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Profile Description	
							Drilling Method: Geoprobe™	Ground Elevation (ft): Not surveyed
0					WD GP GM		Brown WOODWASTE material (no odor, no sheen) (loose, dry)	
							(FILL)	
				0		SM	Gray, sandy GRAVEL with silt (no odor, no sheen) (loose, dry)	
							Brown silty SAND with woodwaste debris (<10%) (no odor, no sheen) (loose, dry)	
5								
				0				
10						SP	Gray, gravelly SAND (no odor, no sheen) (loose, dry)	
							-grades brown, with a slight petroleum-like odor	
						GP	Gray sandy GRAVEL (no odor, no sheen) (loose, dry)	
15								
				0		GM	Dark gray, silty, sandy GRAVEL (slight petroleum-like odor, no sheen) (loose, wet) (ALLUVIUM)	
20								
25								

Groundwater



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1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH

Boring Completed 06/19/13 Point located at State Plane Coordinates:
Total Depth of Boring = 25.0 ft. North: 466867.16
East: 1641359.46

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Yakima Mill Site
Yakima, WA

Log of Boring FPP-B18

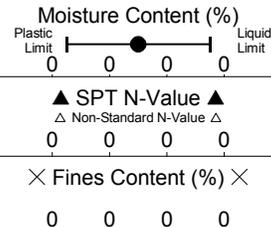
Figure
H-59

FPP-B20

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description
0						GP-GM	Brown, sandy GRAVEL with silt (slight petroleum-like odor, no sheen) (loose, dry) (FILL)
0 - 2				0		SM	Gray, very silty SAND with gravel (no odor, no sheen) (loose, damp)
2 - 5				0		WD	Brown WOODWASTE material with minor dark brown silty fine SAND (no odor, no sheen) (loose, damp)
5 - 7				0		SM	Dark brown, silty fine SAND (no odor, no sheen) (loose, damp)
7 - 10				0		WD	Brown WOODWASTE with minor brown, sandy organic clay (no odor, no sheen) (medium dense, wet)
10 - 20				0		SP	Dark gray, gravelly fine to coarse SAND (no odor, no sheen) (loose, wet) (ALLUVIUM)

Groundwater



Boring Completed 06/20/13
 Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
 North: 466333.65
 East: 1641193.23

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B20

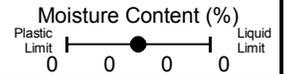
Figure
H-61

FPP-B22

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™	Ground Elevation (ft): Not surveyed	Drilled By: Cascade Drilling Inc.	Logged By: SDS Date: 06/20/13
0										
0.8					SP-SM WD SP-SM		Brown, fine to medium SAND with silt (no odor, no sheen) (medium dense, damp)	(FILL)	Dark brown WOODWASTE (slight petroleum-like odor, no sheen) (loose, damp)	
5							Brown, fine to medium SAND with silt (no odor, no sheen) (medium dense, damp)			
8.8					GP		Gray to brown mottled, sandy GRAVEL with cobbles (slight petroleum-like odor, no sheen) (loose, dry)			
13.5	FPP-B22 -S(12.5-13.5)			1			-dark stained area (petroleum-like odor, light sheen)			
15										

Groundwater



Boring Completed 06/20/13
Total Depth of Boring = 15.0 ft.

Point located at State Plane Coordinates:
North: 466106.00
East: 1640878.58

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B22

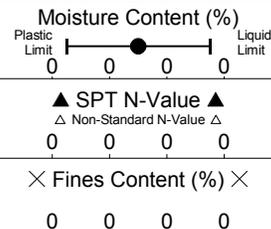
Figure
H-63

FPP-B23

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description
0						GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (loose, dry) (FILL)
0 - 5				0		GP	Gray to brown mottled sandy GRAVEL with cobbles (no odor, no sheen) (loose, dry)
5 - 15.5	FPP-B23 -S(11.5-12.5)			0		SP-SM	Brown, gravelly SAND with silt (no odor, no sheen) (loose, wet)

Groundwater



Boring Completed 06/20/13
 Total Depth of Boring = 15.0 ft.

Point located at State Plane Coordinates:
 North: 465822.60
 East: 1640968.44

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B23

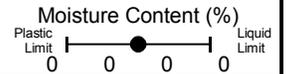
Figure
H-64

FPP-B24

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description
0						SM	Brown, silty fine to medium SAND with gravel (no odor, no sheen) (loose, damp) (FILL)
0.2							
0.8						GP-GM	Dark gray, sandy GRAVEL with silt (slight petroleum-like odor, no sheen) (medium dense, damp)
11.5						CL	Brown, organic-rich sandy CLAY with trace wood debris (no odor, no sheen) (stiff, damp)
11.5 - 16.5	FPP-B24 -S(15-16.5)	d3		0.6		GP-GM	(ALLUVIUM) Dark gray, sandy GRAVEL with silt (slight petroleum-like odor, no sheen) (medium dense, wet)
15							
20							

Groundwater



Boring Completed 06/20/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466346.22
East: 1641173.07

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B24

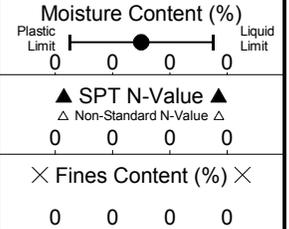
Figure
H-65

FPP-B25

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0						GP	Gray to brown mottled, very sandy GRAVEL with cobbles (no odor, no sheen) (loose, dry) (FILL)
5				0.1		GP	Gray to brown mottled, very sandy GRAVEL with cobbles (slight petroleum-like odor, no sheen) (loose, dry)
10				0.0		SP	Brown, gravelly, fine to medium SAND (no odor, no sheen) (medium dense, dry)
15	FPP-B25-S(15-16)	d3				GP	Gray to brown mottled, sandy GRAVEL with cobbles (no odor, no sheen) (medium dense, dry)
17.0						SP-SM	Brown, gravelly, fine to medium SAND with silt (no odor, no sheen) (medium dense, damp)
20						GP	Gray, sandy GRAVEL (no odor, no sheen) (ALLUVIUM)

Groundwater
 14.5 ft During Groundwater Sample Collection
 17.0 ft ATD

Boring Completed 08/21/13
 Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
 North: 466827.49
 East: 1641033.50

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B25

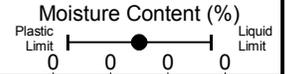
Figure
H-66

FPP-B26

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™		Groundwater
							Ground Elevation (ft): Not surveyed	Drilled By: Cascade Drilling Inc.	
0							Logged By: SDS	Date: 08/21/13	▲ SPT N-Value ▲ △ Non-Standard N-Value △ × Fines Content (%) × 0 0 0 0
0 - 15.5	FPP-B26 -S(15-16)	d3			(Pattern: Dotted)	GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (loose, dry) (FILL)		16.5 ft. (5.0 m) During Groundwater Sample Collection
15.5 - 16.7				0.2	(Pattern: Dotted)	SP	Dark gray, fine to medium SAND with gravel (no odor, no sheen) (loose, damp)		
16.7 - 18.0				0.3	(Pattern: Dotted)	SP	Dark gray, fine to medium SAND with gravel (grades very gravelly fine to medium SAND) (no odor, no sheen) (loose, damp)		
18.0 - 20.0					(Pattern: Dotted)	GP-GM	Gray, sandy GRAVEL with silt (no odor, no sheen) (loose, wet) (ALLUVIUM)		

Boring Completed 08/21/13
 Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
 North: 466765.50
 East: 1641024.38

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
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Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B26

Figure
H-67

FPP-B27

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE

Moisture Content (%)			
Plastic Limit	0 0 0 0		Liquid Limit
▲ SPT N-Value ▲			
△ Non-Standard N-Value △			
0 0 0 0			
× Fines Content (%) ×			
0 0 0 0			

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0						SM	Brown, silty, fine to medium SAND with gravel (no odor, no sheen) (loose, damp)
						GP-GM	(FILL) Gray, sandy GRAVEL with silt (no odor, no sheen) (loose, damp)
5	FPP-B27-S(5-6)	d3		0.0		GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (loose, wet) (ALLUVIUM)
10						GP-GM	Gray, sandy GRAVEL with silt (no odor, no sheen) (dense, wet)
15						GP-GM	Gray, sandy GRAVEL with silt (no odor, no sheen) - gravel ranges up to cobbles (~3 inches) (medium dense, wet)
20				0.0			

Groundwater
13.0 ft During Groundwater Sample Collection - 5.0 ft ATD

Boring Completed 08/21/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466717.49
East: 1641125.16

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B27

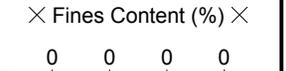
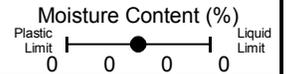
Figure
H-68

FPP-B28

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0						SM	Brown, silty, fine to medium SAND with gravel (no odor, no sheen) (loose, damp) (FILL)
0 - 1.6	FPP-B28-S(15-16)	d3				GP	Gray to brown mottled, sandy GRAVEL with cobbles (no odor, no sheen) (loose, dry)
1.6 - 16.1				0.0		GP	Gray to brown mottled, sandy GRAVEL with cobbles (slight petroleum-like odor, no sheen) (loose, dry)
16.1 - 18.1				0.1		SM	Brown, silty fine to medium SAND with gravel (slight petroleum-like odor, no sheen) (loose, damp)
18.1 - 20.0				1.6		GP-GM	Gray, sandy GRAVEL with silt (strong petroleum-like odor, slight sheen) (loose, wet) (ALLUVIUM)

Groundwater

15.0 ft During Water Sample Collection

Boring Completed 08/23/13
Total Depth of Boring = 20.0 ft.
Point located at State Plane Coordinates:
North: 466852.86
East: 1641207.79

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
Yakima, WA

Log of Boring FPP-B28

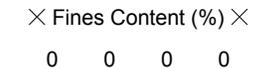
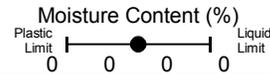
Figure
H-69

FPP-B29

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0						SM	Brown, silty, fine to coarse SAND with gravel (no odor, no sheen) (loose, damp) (FILL)
5						SP	Gray, fine to coarse SAND with gravel (no odor, no sheen) (loose, damp)
10						GP	Gray to brown mottled, sandy GRAVEL with cobbles (no odor, no sheen) (loose, dry)
15				0.0		GP	Gray, sandy GRAVEL (pea gravel) (very slight petroleum-like odor, some sheen) (loose, dry)

Groundwater

10.0 ft ATD

Boring Completed 08/22/13
 Total Depth of Boring = 15.0 ft.

Point located at State Plane Coordinates:
 North: 466869.04
 East: 1641291.97

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
 1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B29

Figure
H-70

FPP-B29a

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE

Moisture Content (%)			
Plastic Limit	0 0 0 0		Liquid Limit
▲ SPT N-Value ▲			
△ Non-Standard N-Value △			
0 0 0 0			
× Fines Content (%) ×			
0 0 0 0			

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description
0							Drilling Method: Geoprobe™ Ground Elevation (ft): Not surveyed Drilled By: Cascade Drilling Inc. Logged By: SDS Date: 08/22/13
1.4						SM	Dark, brown silty fine to coarse SAND with gravel (strong burnt odor, no sheen) (loose, damp) (FILL)
5.0						GP	Gray to brown mottled, sandy GRAVEL with cobbles (no odor, no sheen) (loose, damp)
15.0	FPP-B29a -S(15-16)	d3				GP	Brown, sandy GRAVEL (petroleum-like odor, sheen) (loose, damp) (ALLUVIUM)
16.0						ML	-brown, viscous free-product at 16 ft BGS Gray, sandy SILT (petroleum-like odor, no sheen) (medium stiff, damp)
25.0						SM	Dark brown, silty, fine SAND with gravel (strong petroleum-like odor, heavy sheen) (medium dense, wet)

20.5 ft. ATD

Boring Completed 08/22/13
Total Depth of Boring = 25.0 ft.
Point located at State Plane Coordinates:
North: 466870.76
East: 1641281.74

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
Yakima, WA

Log of Boring FPP-B29a

Figure
H-71

FPP-B29b

LAI Project No: 1148007.010

SAMPLE DATA				SOIL PROFILE			Moisture Content (%)		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Groundwater	Plastic Limit	Liquid Limit
								0	0
0								0	0
0 - 1.3						WD		0	0
								▲ SPT N-Value ▲	▲
								△ Non-Standard N-Value △	△
								× Fines Content (%) ×	×
								0	0
1.3 - 15.5	FPP-B29b -S(15-16)	d3		0.0		GP			
				0.9					
				1.3		GP			
				0.8		ML			
15.5 - 25.0									

Drilling Method: Geoprobe™
 Ground Elevation (ft): Not surveyed
 Drilled By: Cascade Drilling Inc.
 Logged By: SDS Date: 08/23/13

Groundwater

15.55ft (MFD) during Groundwater Sample Collection

Boring Completed 08/23/13 Point located at State Plane Coordinates:
 Total Depth of Boring = 25.0 ft. North: 466862.97
 East: 1641319.02

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
 1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B29b

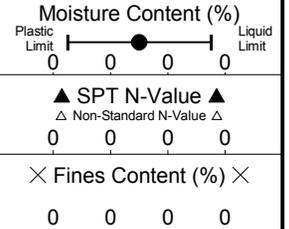
Figure
H-72

FPP-B29c

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0						SM	Brown, silty fine to medium SAND (no odor, no sheen) (loose, damp)
					PC		(FILL)
					GP-GM		Concrete
							Brown, sandy GRAVEL with silt (no odor, no sheen) (loose, damp)
5				0.0		GP	Greenish-gray, sandy GRAVEL (petroleum-like odor, no sheen) (loose, damp)
10				0.0		GP	Gray to brown mottled, sandy GRAVEL with cobbles (slight petroleum-like odor, no sheen) (loose, dry)
15	FPP-B29c -S(15-16)	d3		0.2		SM	Gray sandy SILT (strong petroleum-like odor, sheen) (medium stiff, damp) (ALLUVIUM)

Groundwater

Groundwater Not Encountered

Boring Completed 08/23/13
 Total Depth of Boring = 20.0 ft.
 Point located at State Plane Coordinates:
 North: 466901.67
 East: 1641249.56

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
 1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B29c

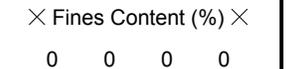
Figure
H-73

FPP-B30

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™		Groundwater
							Ground Elevation (ft): Not surveyed	Drilled By: Cascade Drilling Inc.	
0				0.0		GP-GM	Dark gray, sandy GRAVEL with silt (no odor, no sheen) (loose, damp)	(FILL)	Groundwater Not Encountered
						GP	Mottled gray and light gray, sandy GRAVEL with cobbles (no odor, no sheen) (loose, dry)		
5						SM	Gray, silty fine to coarse SAND with gravel (no odor, no sheen) (loose, dry)		
						GP	Gray to brown mottled sandy GRAVEL with cobbles (no odor, no sheen) (loose, dry)		
						GP	Dark gray, sandy GRAVEL (no odor, no sheen) (loose, dry)		
						GP	Gray to brown mottled sandy GRAVEL with cobbles (no odor, no sheen) (loose, dry)		
15	FPP-B30-S(14-15)	d3				CL	Dark brown, silty CLAY (no odor, no sheen) (stiff, damp)	(ALLUVIUM)	

Boring Completed 08/22/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466758.21
East: 1641336.69

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
Yakima, WA

Log of Boring FPP-B30

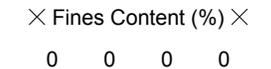
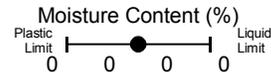
Figure
H-74

FPP-B31

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0							Drilling Method: Geoprobe™ Ground Elevation (ft): Not surveyed Drilled By: Cascade Drilling Inc. Logged By: SDS Date: 08/22/13
0 - 6.1					SM, WD, GP		Brown, silty, fine to medium SAND with gravel (slight petroleum-like odor, no sheen) (loose, damp) (FILL) Brown WOODWASTE material (100%) (no odor, no sheen) (loose, damp) Gray, sandy GRAVEL with crushed cobbles (no odor, no sheen) (loose, dry)
6.1 - 9.0				6.1 9.0	SM		Dark brown, silty, fine to medium SAND (petroleum-like odor, no sheen) (loose, damp)
9.0 - 17.0					SM		Gray, silty fine SAND (slight petroleum-like odor, no sheen) (medium dense, damp)
17.0 - 20.0	FPP-B31-S(15-16)	d3	0.0	0.0	GP		Gray, sandy GRAVEL (slight odor, no sheen) (dense, damp) (ALLUVIUM)
20.0 - 20.0				0.0	SM		Gray, silty fine SAND with gravel (no odor, no sheen) (loose, wet)

Groundwater

17.0 ft. ATD 15.0 ft During Groundwater Sample Collection

Boring Completed 08/22/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466635.82
East: 1641409.93

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B31

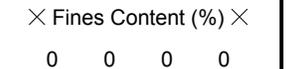
Figure
H-75

FPP-B32

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™	Ground Elevation (ft): Not surveyed	Drilled By: Cascade Drilling Inc.	Logged By: SDS Date: 08/22/13
0						GP	Brown, sandy GRAVEL (no odor, no sheen) (loose, dry)			
							(FILL)			
5						GP	Brown, sandy GRAVEL (no odor, no sheen) (loose, dry)			
						GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (loose, damp)			
10						GP	Brown, sandy GRAVEL (no odor, no sheen) (medium dense, dry)			
						GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (medium dense, damp)			
15	FPP-B32 -S(15-16)	d3				GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (medium dense, damp)			
						ML	Black SILT with trace sand and gravel (no odor, no sheen) (dense, damp)			

Groundwater

16.5 ft ATD

Boring Completed 08/22/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466590.63
East: 1640876.66

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
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Yakima Mill Site
Yakima, WA

Log of Boring FPP-B32

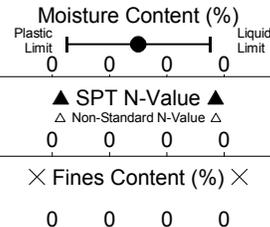
Figure
H-76

FPP-B33

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description
0						GP	Brown, sandy GRAVEL (no odor, no sheen) (loose, dry) (FILL)
5						GP	Gray GRAVEL with cobbles and trace sand (no odor, no sheen) (loose, dry)
10	FPP-B33-S(10-11)	d3		0.0		GP	Brown, sandy GRAVEL (no odor, no sheen) (loose, dry) (ALLUVIUM)
15						ML	Gray, sandy SILT with gravel (no odor, no sheen) (dense, wet)

Groundwater

15.0 ft During Groundwater Sample Collection

Boring Completed 08/22/13
 Total Depth of Boring = 20.0 ft.
 Point located at State Plane Coordinates:
 North: 466447.12
 East: 1640923.26

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
 1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
 Yakima, WA

Log of Boring FPP-B33

Figure
H-77

FPP-B34

LAI Project No: 1148007.010

SAMPLE DATA				SOIL PROFILE			Moisture Content (%)		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Groundwater	Plastic Limit	Liquid Limit
								0	0
								▲ SPT N-Value ▲ △ Non-Standard N-Value △ 0 0 0 0	
								× Fines Content (%) × 0 0 0 0	
0						GP			
5						GP			
10						GP			
15	FPP-B34 -S(15-16)	d3				GP			
						GP			
20									

Boring Completed 08/22/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466760.33
East: 1641143.44

16.0 ft. ATD

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
 1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
Yakima, WA

Log of Boring FPP-B34

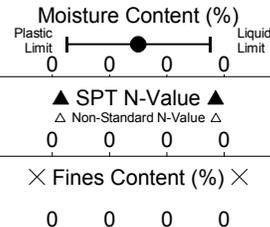
Figure
H-78

TP-B01

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0.0	TP-B01-S(1-2)	d3		0.0	(FILL)	GP-GM/SM	Brown, silty fine SAND with gravel (no odor, no sheen) (loose, damp)
0.0				0.0			Brown, sandy GRAVEL with silt (no odor, no sheen) (loose, dry)
5.0	TP-B01-S(6.5-7.5)	d3		0.0		GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (loose, damp)
						SP-SM	Brown, gravelly, fine to medium SAND with silt (no odor, no sheen) (loose, wet)
10.0						GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (loose, wet) (ALLUVIUM)
						SP-SM	Brown, gravelly, fine to coarse SAND with silt (no odor, no sheen) (loose, wet)
15.0						GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (loose, wet)
20.0				0.0		GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (loose, wet)

Groundwater
15.0 ft During Groundwater Sample Collection

Boring Completed 06/21/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 467011.16
East: 1640728.63

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
Yakima, WA

Log of Boring TP-B01

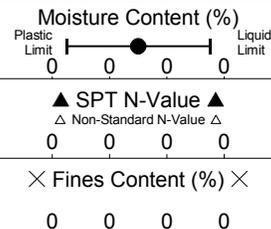
Figure
H-79

TP-B02

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE



Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0						GP	Brown, coarse GRAVEL (no odor, no sheen) (loose, dry) (FILL)
5				0.0		GP-GM	Brown, sandy GRAVEL with silt (no odor, no sheen) (loose, dry)
10				0.0		GP-GM	Mottled brown to gray, sandy GRAVEL with silt and cobbles (no odor, no sheen) (loose, dry)
15	TP-B02-S(13-14)	d3		0.0			

Groundwater

14.0 ft ATD

Boring Completed 06/20/13 Point located at State Plane Coordinates:
 Total Depth of Boring = 15.0 ft. North: 466986.52
 East: 1640754.28

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
 1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
Yakima, WA

Log of Boring TP-B02

Figure
H-80

TP-B04

LAI Project No: 1148007.010

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Profile Description	Groundwater	Moisture Content (%)			
									Plastic Limit	●	Liquid Limit	
0	TP-B04 -S(2-3)	d3	3.0	3.0	SP	SM	Brown, fine to medium SAND with gravel (no odor, no sheen) (loose, dry)	Groundwater	▲ SPT N-Value ▲ △ Non-Standard N-Value △			
							× Fines Content (%) ×					
5							Black, stained, silty fine to medium SAND with gravel (strong petroleum-like odor, heavy sheen) (medium dense, damp)	Groundwater Not Encountered	0 0 0 0			
									0 0 0 0			

Boring Completed 06/20/13
Total Depth of Boring = 5.0 ft.

Point located at State Plane Coordinates:
North: 467000.66
East: 1640827.96

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH
1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



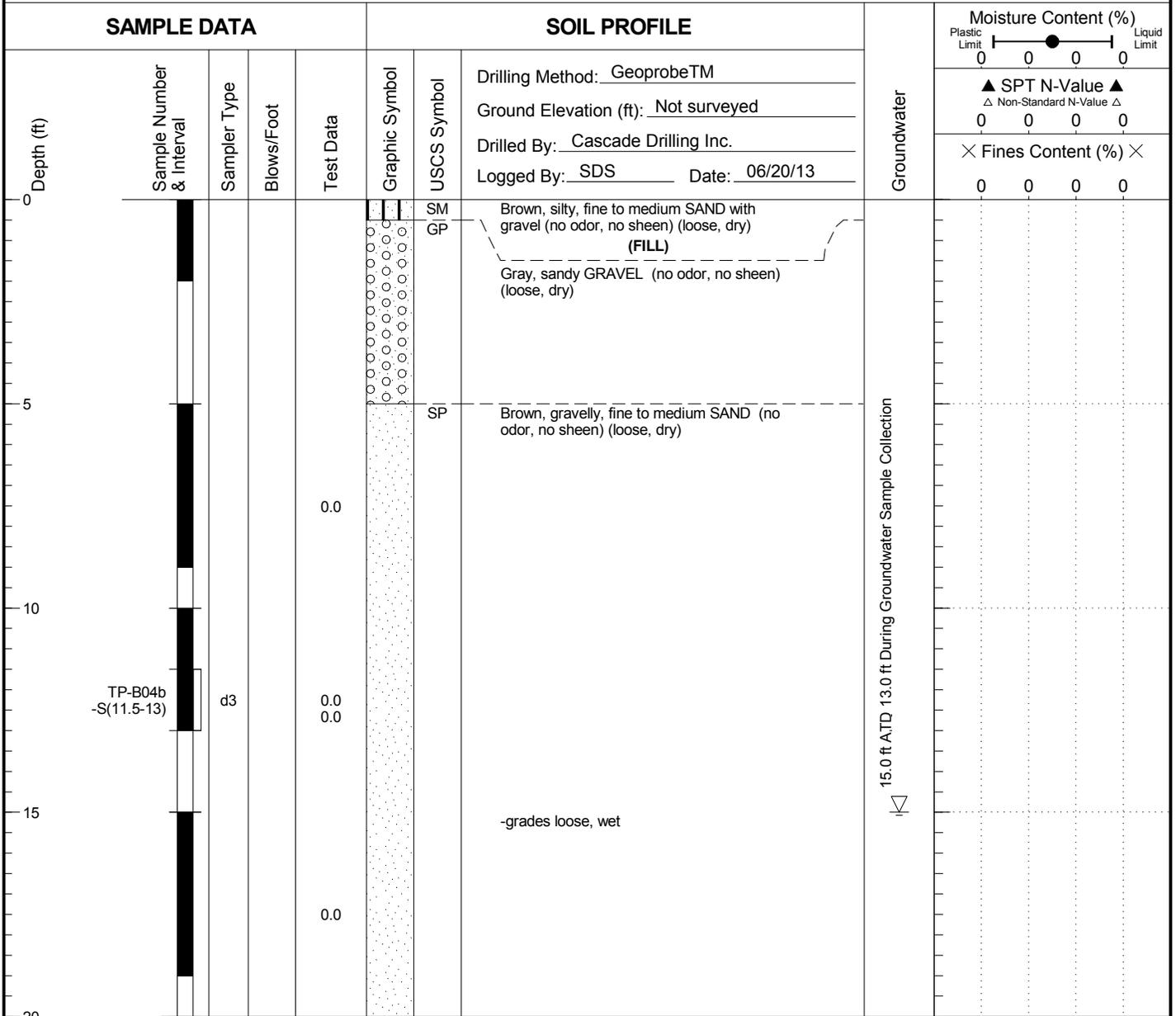
Yakima Mill Site
Yakima, WA

Log of Boring TP-B04

Figure
H-82

TP-B04b

LAI Project No: 1148007.010



Boring Completed 06/20/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 466994.14
East: 1640844.13

15.0 ft ATD 13.0 ft During Groundwater Sample Collection

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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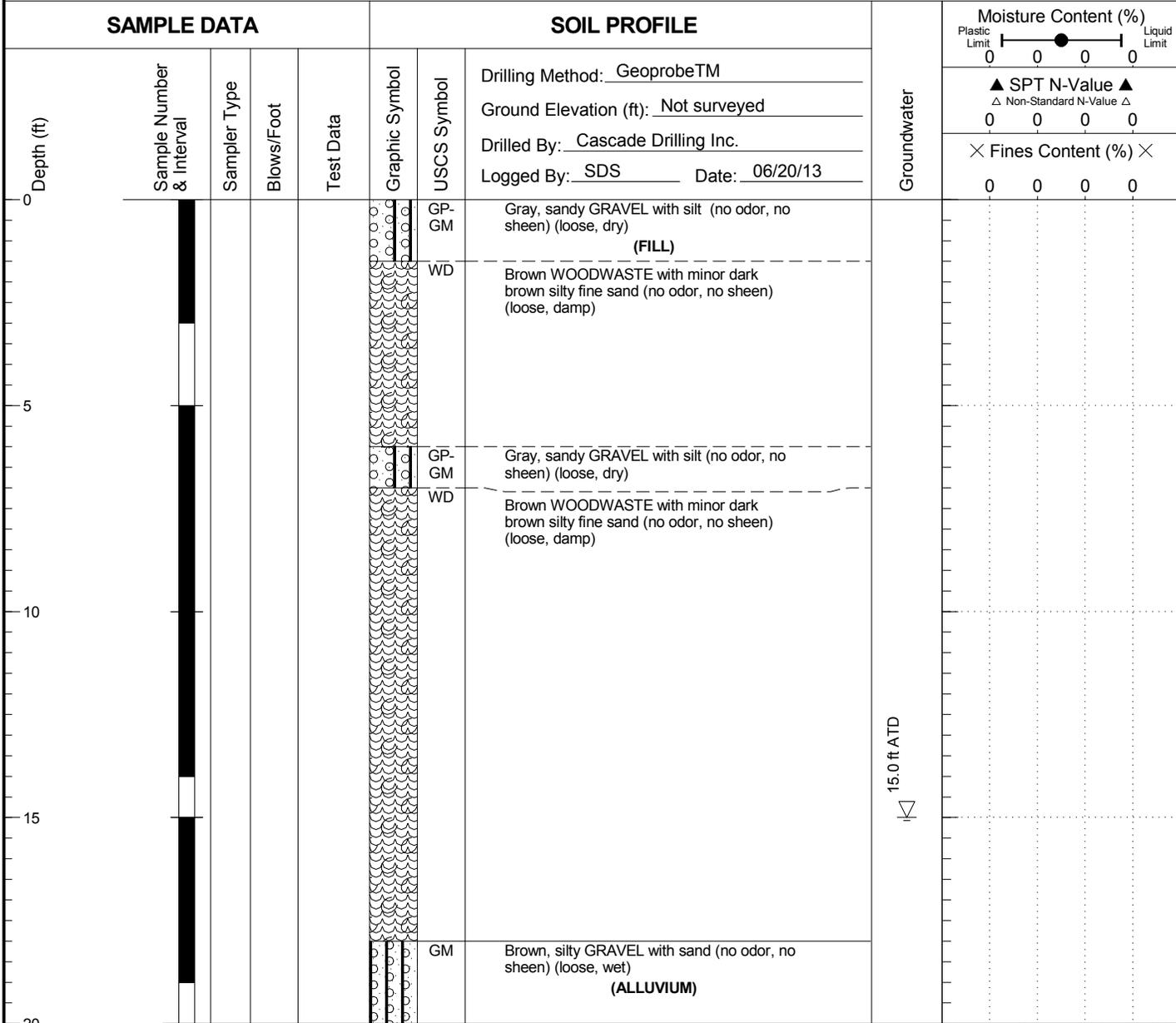
Yakima Mill Site
Yakima, WA

Log of Boring TP-B04b

Figure
H-84

TP-B05

LAI Project No: 1148007.010



Boring Completed 06/20/13
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 467037.90
East: 1640884.36

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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1148007.01 3/10/15 N:\PROJECTS\1148007.010.GPJ SOIL BORING LOG WITH GRAPH



Yakima Mill Site
Yakima, WA

Log of Boring TP-B05

Figure
H-85

Laboratory Data Reports



September 30, 2014

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On September 4th, 4 samples were received by our laboratory and assigned our laboratory project number EV14090022. The project was identified as your Yakima Landfill / #1148008.010.014. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-01
CLIENT SAMPLE ID	MW-105 (2.5-3.5) 090214	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/2/2014 11:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/05/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/05/2014	EBS
HCID-Oil Range	NWTPH-HCID	>100	100	1	MG/KG	09/05/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/15/2014	EBS
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	09/15/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	380	50	1	MG/KG	09/15/2014	EBS
TPH-Oil Range	NWTPH-DX	510	50	1	MG/KG	09/15/2014	EBS
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	69	1	ug/Kg	09/17/2014	GAP
Phenanthrene	EPA-8270 SIM	78	20	1	ug/Kg	09/17/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoranthene	EPA-8270 SIM	240	20	1	ug/Kg	09/17/2014	GAP
Pyrene	EPA-8270 SIM	120	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	99	20	1	ug/Kg	09/17/2014	GAP
Chrysene	EPA-8270 SIM	63	20	1	ug/Kg	09/17/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	110	20	1	ug/Kg	09/17/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	31	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	71	20	1	ug/Kg	09/17/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	38	20	1	ug/Kg	09/17/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	64	20	1	ug/Kg	09/17/2014	GAP
Fluoride	EPA-300.0M	1.7	1.6	1	MG/KG	09/17/2014	GAP
Nitrate as N	EPA-300.0M	63	5.0	10	MG/KG	09/18/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Mercury	EPA-7471	0.18	0.0041	1	MG/KG	09/17/2014	RAL
Arsenic	EPA-6020	3.6	0.89	5	MG/KG	09/18/2014	RAL
Barium	EPA-6020	140	0.17	5	MG/KG	09/18/2014	RAL
Cadmium	EPA-6020	1.3	0.27	5	MG/KG	09/18/2014	RAL
Chromium	EPA-6020	24	0.45	5	MG/KG	09/18/2014	RAL
Iron	EPA-6020	35000	50	5	MG/KG	09/18/2014	RAL
Lead	EPA-6020	190	0.29	5	MG/KG	09/18/2014	RAL
Manganese	EPA-6020	330	0.35	5	MG/KG	09/18/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/18/2014	RAL

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-01
CLIENT SAMPLE ID	MW-105 (2.5-3.5) 090214	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/2/2014 11:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver	EPA-6020	U	0.28	5	MG/KG	09/18/2014	RAL
Sodium	EPA-6020	490	50	5	MG/KG	09/18/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	80.5	09/05/2014	EBS
C25	NWTPH-HCID	132	09/05/2014	EBS
C25	NWTPH-DX w/ SGA	58.1	09/15/2014	EBS
C25	NWTPH-DX	58.6	09/15/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	98.5	09/17/2014	GAP
Terphenyl-d14	EPA-8270 SIM	139	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-02
CLIENT SAMPLE ID	MW-105 (17.5-19) 090214	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/2/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/05/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/05/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/05/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Vinyl Chloride	EPA-8260	U	0.034	1	ug/Kg	09/10/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromodichloromethane	EPA-8260	U	0.82	1	ug/Kg	09/10/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.87	1	ug/Kg	09/10/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-02
CLIENT SAMPLE ID	MW-105 (17.5-19) 090214	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/2/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.91	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.95	1	ug/Kg	09/10/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	59	1	ug/Kg	09/05/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-02
CLIENT SAMPLE ID	MW-105 (17.5-19) 090214	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/2/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	09/05/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	31	1	ug/Kg	09/05/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Aniline	EPA-8270	U	53	1	ug/Kg	09/05/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	110	1	ug/Kg	09/05/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	110	1	ug/Kg	09/05/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/05/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	280	1	ug/Kg	09/05/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/05/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-02
CLIENT SAMPLE ID	MW-105 (17.5-19) 090214	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/2/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/05/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/05/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	46	1	ug/Kg	09/05/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	43	1	ug/Kg	09/05/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/05/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	25	1	ug/Kg	09/05/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	200	1	ug/Kg	09/05/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-02
CLIENT SAMPLE ID	MW-105 (17.5-19) 090214	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/2/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
PCB-1016	EPA-8082	U	0.0057	1	MG/KG	09/16/2014	CAS
PCB-1221	EPA-8082	U	0.012	1	MG/KG	09/16/2014	CAS
PCB-1232	EPA-8082	U	0.0057	1	MG/KG	09/16/2014	CAS
PCB-1242	EPA-8082	0.0059	0.0057	1	MG/KG	09/16/2014	CAS
PCB-1248	EPA-8082	U	0.0057	1	MG/KG	09/16/2014	CAS
PCB-1254	EPA-8082	U	0.0057	1	MG/KG	09/16/2014	CAS
PCB-1260	EPA-8082	U	0.0057	1	MG/KG	09/16/2014	CAS
A-BHC	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
G-BHC	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
B-BHC	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Heptachlor	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
D-BHC	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Aldrin	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Chlordane	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endosulfan I	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
4,4'-DDE	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Dieldrin	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endrin	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
4,4'-DDD	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endosulfan II	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
4,4'-DDT	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Methoxychlor	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Toxaphene	EPA-8081	U	0.15	1	MG/KG	09/16/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/20/2014	RAL
pH	EPA-9045	7.87	± 0.01	1	S.U.	09/04/2014	SMR
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/17/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Mercury	EPA-7471	0.023	0.0041	1	MG/KG	09/09/2014	RAL
Arsenic	EPA-6020	2.7	0.86	5	MG/KG	09/09/2014	RAL
Barium	EPA-6020	79	0.17	5	MG/KG	09/09/2014	RAL
Cadmium	EPA-6020	U	0.27	5	MG/KG	09/09/2014	RAL
Chromium	EPA-6020	18	0.44	5	MG/KG	09/09/2014	RAL
Iron	EPA-6020	21000	50	5	MG/KG	09/09/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-02
CLIENT SAMPLE ID	MW-105 (17.5-19) 090214	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/2/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	4.7	0.28	5	MG/KG	09/09/2014	RAL
Manganese	EPA-6020	350	0.34	5	MG/KG	09/09/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/09/2014	RAL
Silver	EPA-6020	U	0.27	5	MG/KG	09/09/2014	RAL
Sodium	EPA-6020	1200	50	5	MG/KG	09/09/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	78.2	09/05/2014	EBS
C25	NWTPH-HCID	87.7	09/05/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	103	09/10/2014	DLC
Toluene-d8	EPA-8260	95.4	09/10/2014	DLC
4-Bromofluorobenzene	EPA-8260	101	09/10/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	104	09/05/2014	GAP
Terphenyl-d14	EPA-8270 SIM	87.9	09/05/2014	GAP
2-Fluorophenol	EPA-8270	92.8	09/05/2014	GAP
Phenol-d5	EPA-8270	84.3	09/05/2014	GAP
Nitrobenzene-d5	EPA-8270	66.9	09/05/2014	GAP
2-Fluorobiphenyl	EPA-8270	87.5	09/05/2014	GAP
2,4,6-Tribromophenol	EPA-8270	86.7	09/05/2014	GAP
Terphenyl-d14	EPA-8270	94.8	09/05/2014	GAP
DCB	EPA-8082	67.0	09/16/2014	CAS
TCMX	EPA-8081	58.0	09/16/2014	CAS
DCB	EPA-8081	61.0	09/16/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-03
CLIENT SAMPLE ID	MW-104 (2.5-3) 090314	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/3/2014 8:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/05/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/05/2014	EBS
HCID-Oil Range	NWTPH-HCID	>100	100	1	MG/KG	09/05/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/17/2014	EBS
TPH-Diesel Range	NWTPH-DX	U	46	1	MG/KG	09/17/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	300	50	1	MG/KG	09/17/2014	EBS
TPH-Oil Range	NWTPH-DX	450	50	1	MG/KG	09/17/2014	EBS
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	63	1	ug/Kg	09/17/2014	GAP
Phenanthrene	EPA-8270 SIM	28	20	1	ug/Kg	09/17/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoranthene	EPA-8270 SIM	170	20	1	ug/Kg	09/17/2014	GAP
Pyrene	EPA-8270 SIM	45	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	21	20	1	ug/Kg	09/17/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	30	20	1	ug/Kg	09/17/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	22	20	1	ug/Kg	09/17/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	25	20	1	ug/Kg	09/17/2014	GAP
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/17/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Mercury	EPA-7471	0.090	0.0041	1	MG/KG	09/17/2014	RAL
Arsenic	EPA-6020	2.2	0.82	5	MG/KG	09/18/2014	RAL
Barium	EPA-6020	91	0.16	5	MG/KG	09/18/2014	RAL
Cadmium	EPA-6020	U	0.25	5	MG/KG	09/18/2014	RAL
Chromium	EPA-6020	12	0.41	5	MG/KG	09/18/2014	RAL
Iron	EPA-6020	20000	50	5	MG/KG	09/18/2014	RAL
Lead	EPA-6020	56	0.26	5	MG/KG	09/18/2014	RAL
Manganese	EPA-6020	330	0.32	5	MG/KG	09/18/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/18/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-03
CLIENT SAMPLE ID	MW-104 (2.5-3) 090314	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/3/2014 8:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver	EPA-6020	3.5	0.26	5	MG/KG	09/18/2014	RAL
Sodium	EPA-6020	540	50	5	MG/KG	09/18/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	78.8	09/05/2014	EBS
C25	NWTPH-HCID	85.7	09/05/2014	EBS
C25	NWTPH-DX w/ SGA	92.9	09/17/2014	EBS
C25	NWTPH-DX	86.0	09/17/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	70.0	09/17/2014	GAP
Terphenyl-d14	EPA-8270 SIM	99.4	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-04
CLIENT SAMPLE ID	MW-104 (19-20) 090314	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/3/2014 11:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/05/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/05/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/05/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Vinyl Chloride	EPA-8260	U	0.035	1	ug/Kg	09/10/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromodichloromethane	EPA-8260	U	0.84	1	ug/Kg	09/10/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.90	1	ug/Kg	09/10/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-04
CLIENT SAMPLE ID	MW-104 (19-20) 090314	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/3/2014 11:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.93	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.98	1	ug/Kg	09/10/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	62	1	ug/Kg	09/05/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-04
CLIENT SAMPLE ID	MW-104 (19-20) 090314	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/3/2014 11:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/05/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	09/05/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	29	1	ug/Kg	09/05/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Aniline	EPA-8270	U	50	1	ug/Kg	09/05/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/05/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	270	1	ug/Kg	09/05/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/05/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-04
CLIENT SAMPLE ID	MW-104 (19-20) 090314	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/3/2014 11:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/05/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/05/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	43	1	ug/Kg	09/05/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	40	1	ug/Kg	09/05/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/05/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	23	1	ug/Kg	09/05/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/05/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	180	1	ug/Kg	09/05/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	120	100	1	ug/Kg	09/05/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-04
CLIENT SAMPLE ID	MW-104 (19-20) 090314	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/3/2014 11:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/05/2014	GAP
PCB-1016	EPA-8082	U	0.0061	1	MG/KG	09/16/2014	CAS
PCB-1221	EPA-8082	U	0.013	1	MG/KG	09/16/2014	CAS
PCB-1232	EPA-8082	U	0.0061	1	MG/KG	09/16/2014	CAS
PCB-1242	EPA-8082	U	0.0061	1	MG/KG	09/16/2014	CAS
PCB-1248	EPA-8082	U	0.0061	1	MG/KG	09/16/2014	CAS
PCB-1254	EPA-8082	U	0.0061	1	MG/KG	09/16/2014	CAS
PCB-1260	EPA-8082	U	0.0061	1	MG/KG	09/16/2014	CAS
A-BHC	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
G-BHC	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
B-BHC	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Heptachlor	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
D-BHC	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Aldrin	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Chlordane	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Endosulfan I	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
4,4'-DDE	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Dieldrin	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Endrin	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
4,4'-DDD	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Endosulfan II	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
4,4'-DDT	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Methoxychlor	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Toxaphene	EPA-8081	U	0.16	1	MG/KG	09/16/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/20/2014	RAL
pH	EPA-9045	7.51	± 0.01	1	S.U.	09/04/2014	SMR
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/17/2014	GAP
Nitrate as N	EPA-300.0M	0.91	0.50	1	MG/KG	09/17/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Mercury	EPA-7471	0.23	0.0041	1	MG/KG	09/09/2014	RAL
Arsenic	EPA-6020	1.5	0.83	5	MG/KG	09/09/2014	RAL
Barium	EPA-6020	76	0.16	5	MG/KG	09/09/2014	RAL
Cadmium	EPA-6020	U	0.26	5	MG/KG	09/09/2014	RAL
Chromium	EPA-6020	19	0.42	5	MG/KG	09/09/2014	RAL
Iron	EPA-6020	22000	50	5	MG/KG	09/09/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090022-04
CLIENT SAMPLE ID	MW-104 (19-20) 090314	DATE RECEIVED:	09/04/2014
		COLLECTION DATE:	9/3/2014 11:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	3.3	0.27	5	MG/KG	09/09/2014	RAL
Manganese	EPA-6020	240	0.33	5	MG/KG	09/09/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/09/2014	RAL
Silver	EPA-6020	U	0.26	5	MG/KG	09/09/2014	RAL
Sodium	EPA-6020	540	50	5	MG/KG	09/09/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	76.7	09/05/2014	EBS
C25	NWTPH-HCID	78.6	09/05/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	102	09/10/2014	DLC
Toluene-d8	EPA-8260	99.2	09/10/2014	DLC
4-Bromofluorobenzene	EPA-8260	101	09/10/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	116	09/05/2014	GAP
Terphenyl-d14	EPA-8270 SIM	106	09/05/2014	GAP
2-Fluorophenol	EPA-8270	94.8	09/05/2014	GAP
Phenol-d5	EPA-8270	85.5	09/05/2014	GAP
Nitrobenzene-d5	EPA-8270	67.2	09/05/2014	GAP
2-Fluorobiphenyl	EPA-8270	86.1	09/05/2014	GAP
2,4,6-Tribromophenol	EPA-8270	87.6	09/05/2014	GAP
Terphenyl-d14	EPA-8270	95.8	09/05/2014	GAP
DCB	EPA-8082	68.0	09/16/2014	CAS
TCMX	EPA-8081	56.0	09/16/2014	CAS
DCB	EPA-8081	60.0	09/16/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 9/30/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090022
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-082914S - Batch 85665 - Soil by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	08/29/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	08/29/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	08/29/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091114S - Batch 85990 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	46	1	MG/KG	09/11/2014	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	09/11/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091014S - Batch 85939 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Vinyl Chloride	EPA-8260	U	0.029	1	ug/Kg	09/10/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-091014S - Batch 85939 - Soil by EPA-8260

Benzene	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromodichloromethane	EPA-8260	U	0.69	1	ug/Kg	09/10/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.74	1	ug/Kg	09/10/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.76	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.80	1	ug/Kg	09/10/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 9/30/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090022
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091014S - Batch 85939 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-090314S - Batch 85772 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	77	1	ug/Kg	09/04/2014	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091114S - Batch 86097 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	77	1	ug/Kg	09/18/2014	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 9/30/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090022
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091114S - Batch 86097 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-082814S - Batch 85611 - Soil by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	200	1	ug/Kg	08/29/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	33	1	ug/Kg	08/29/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Aniline	EPA-8270	U	58	1	ug/Kg	08/29/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	120	1	ug/Kg	08/29/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	08/29/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	08/29/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	120	1	ug/Kg	08/29/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	08/29/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	08/29/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	310	1	ug/Kg	08/29/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-082814S - Batch 85611 - Soil by EPA-8270

4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	08/29/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	08/29/2014	GAP
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	08/29/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	08/29/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	08/29/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	49	1	ug/Kg	08/29/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	46	1	ug/Kg	08/29/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	08/29/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	27	1	ug/Kg	08/29/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	08/29/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	08/29/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	210	1	ug/Kg	08/29/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 9/30/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090022
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-082814S - Batch 85611 - Soil by EPA-8270

Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	08/29/2014	GAP
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U - Analyte analyzed for but not detected at level above reporting limit.

MB1-09/16/2014 - Batch R241295 - Soil by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0061	1	MG/KG	09/16/2014	CAS
PCB-1221	EPA-8082	U	0.013	1	MG/KG	09/16/2014	CAS
PCB-1232	EPA-8082	U	0.0061	1	MG/KG	09/16/2014	CAS
PCB-1242	EPA-8082	U	0.0057	1	MG/KG	09/16/2014	CAS
PCB-1248	EPA-8082	U	0.0061	1	MG/KG	09/16/2014	CAS
PCB-1254	EPA-8082	U	0.0057	1	MG/KG	09/16/2014	CAS
PCB-1260	EPA-8082	U	0.0061	1	MG/KG	09/16/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-09/16/2014 - Batch R241291 - Soil by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
G-BHC	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
B-BHC	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Heptachlor	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
D-BHC	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Aldrin	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Chlordane	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endosulfan I	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
4,4'-DDE	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Dieldrin	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endrin	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
4,4'-DDD	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Endosulfan II	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
4,4'-DDT	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Methoxychlor	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Toxaphene	EPA-8081	U	0.16	1	MG/KG	09/16/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 9/30/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090022
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MBLK-9202014 - Batch R241227 - Soil by EPA-7196

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/20/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9172014 - Batch R241241 - Soil by EPA-300.0M

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/17/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9172014 - Batch R241013 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	0.0041	1	MG/KG	09/17/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-992014 - Batch R241252 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	0.0041	1	MG/KG	09/09/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-090914S - Batch 85877 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	0.15	1	MG/KG	09/09/2014	RAL
Barium	EPA-6020	U	0.028	1	MG/KG	09/09/2014	RAL
Cadmium	EPA-6020	U	0.045	1	MG/KG	09/09/2014	RAL
Chromium	EPA-6020	U	0.074	1	MG/KG	09/09/2014	RAL
Iron	EPA-6020	U	10	1	MG/KG	09/09/2014	RAL
Lead	EPA-6020	U	0.047	1	MG/KG	09/09/2014	RAL
Manganese	EPA-6020	U	0.058	1	MG/KG	09/09/2014	RAL
Selenium	EPA-6020	U	1.0	1	MG/KG	09/09/2014	RAL
Silver	EPA-6020	U	0.046	1	MG/KG	09/09/2014	RAL
Sodium	EPA-6020	U	10	1	MG/KG	09/09/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-091614S - Batch 86114 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Arsenic	EPA-6020	U	0.15	1	MG/KG	09/17/2014	RAL
Barium	EPA-6020	U	0.028	1	MG/KG	09/17/2014	RAL
Cadmium	EPA-6020	U	0.045	1	MG/KG	09/17/2014	RAL
Chromium	EPA-6020	U	0.074	1	MG/KG	09/17/2014	RAL
Iron	EPA-6020	U	10	1	MG/KG	09/17/2014	RAL
Lead	EPA-6020	U	0.047	1	MG/KG	09/17/2014	RAL
Manganese	EPA-6020	U	0.058	1	MG/KG	09/17/2014	RAL
Selenium	EPA-6020	U	1.0	1	MG/KG	09/17/2014	RAL
Silver	EPA-6020	U	0.046	1	MG/KG	09/17/2014	RAL
Sodium	EPA-6020	U	10	1	MG/KG	09/17/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 85990 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	84.7			09/11/2014	EBS
TPH-Diesel Range - BSD	NWTPH-DX	87.1	3		09/11/2014	EBS

ALS Test Batch ID: 85939 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	92.6			09/10/2014	DLC
1,1-Dichloroethene - BSD	EPA-8260	89.3	4		09/10/2014	DLC
Benzene - BS	EPA-8260	90.9			09/10/2014	DLC
Benzene - BSD	EPA-8260	87.0	4		09/10/2014	DLC
Trichloroethene - BS	EPA-8260	94.4			09/10/2014	DLC
Trichloroethene - BSD	EPA-8260	90.1	5		09/10/2014	DLC
Toluene - BS	EPA-8260	96.2			09/10/2014	DLC
Toluene - BSD	EPA-8260	91.2	5		09/10/2014	DLC
Chlorobenzene - BS	EPA-8260	97.7			09/10/2014	DLC
Chlorobenzene - BSD	EPA-8260	95.9	2		09/10/2014	DLC

ALS Test Batch ID: 85772 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	EPA-8270 SIM	80.8			09/04/2014	GAP
Naphthalene - BSD	EPA-8270 SIM	73.2	10		09/04/2014	GAP
Acenaphthene - BS	EPA-8270 SIM	85.8			09/04/2014	GAP
Acenaphthene - BSD	EPA-8270 SIM	76.0	12		09/04/2014	GAP
Pentachlorophenol - BS	EPA-8270 SIM	157			09/04/2014	GAP
Pentachlorophenol - BSD	EPA-8270 SIM	131	18		09/04/2014	GAP
Pyrene - BS	EPA-8270 SIM	92.7			09/04/2014	GAP
Pyrene - BSD	EPA-8270 SIM	92.3	0		09/04/2014	GAP
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	78.8			09/04/2014	GAP
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	73.4	7		09/04/2014	GAP

ALS Test Batch ID: 86097 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	EPA-8270 SIM	74.3			09/18/2014	GAP
Naphthalene - BSD	EPA-8270 SIM	84.4	13		09/18/2014	GAP
Acenaphthene - BS	EPA-8270 SIM	90.5			09/18/2014	GAP
Acenaphthene - BSD	EPA-8270 SIM	92.8	3		09/18/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol - BS	EPA-8270 SIM	89.0			09/18/2014	GAP
Pentachlorophenol - BSD	EPA-8270 SIM	123	32		09/18/2014	GAP
Pyrene - BS	EPA-8270 SIM	92.1			09/18/2014	GAP
Pyrene - BSD	EPA-8270 SIM	106	14		09/18/2014	GAP
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	58.2			09/18/2014	GAP
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	64.7	11		09/18/2014	GAP

ALS Test Batch ID: 85611 - Soil by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	81.0			08/29/2014	GAP
Phenol - BSD	EPA-8270	82.8	2		08/29/2014	GAP
2-Chlorophenol - BS	EPA-8270	82.0			08/29/2014	GAP
2-Chlorophenol - BSD	EPA-8270	84.1	3		08/29/2014	GAP
1,4-Dichlorobenzene - BS	EPA-8270	78.2			08/29/2014	GAP
1,4-Dichlorobenzene - BSD	EPA-8270	81.0	4		08/29/2014	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	88.7			08/29/2014	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	85.5	4		08/29/2014	GAP
1,2,4-Trichlorobenzene - BS	EPA-8270	78.9			08/29/2014	GAP
1,2,4-Trichlorobenzene - BSD	EPA-8270	82.5	4		08/29/2014	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	83.3			08/29/2014	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	84.8	2		08/29/2014	GAP
Acenaphthene - BS	EPA-8270	84.8			08/29/2014	GAP
Acenaphthene - BSD	EPA-8270	89.1	5		08/29/2014	GAP
4-Nitrophenol - BS	EPA-8270	78.6			08/29/2014	GAP
4-Nitrophenol - BSD	EPA-8270	78.8	0		08/29/2014	GAP
2,4-Dinitrotoluene - BS	EPA-8270	65.6			08/29/2014	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	68.5	4		08/29/2014	GAP
Pyrene - BS	EPA-8270	84.1			08/29/2014	GAP
Pyrene - BSD	EPA-8270	88.2	5		08/29/2014	GAP

ALS Test Batch ID: R241295 - Soil by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	80.5			09/16/2014	CAS
PCB-1260 - BS	EPA-8082	92.5			09/16/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R241291 - Soil by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	71.9			09/16/2014	CAS
G-BHC - BS	EPA-8081	72.4			09/16/2014	CAS
B-BHC - BS	EPA-8081	68.2			09/16/2014	CAS
Heptachlor - BS	EPA-8081	65.6			09/16/2014	CAS
D-BHC - BS	EPA-8081	77.4			09/16/2014	CAS
Aldrin - BS	EPA-8081	63.9			09/16/2014	CAS
Heptachlor Epoxide - BS	EPA-8081	67.0			09/16/2014	CAS
Chlordane - BS	EPA-8081	66.0			09/16/2014	CAS
Endosulfan I - BS	EPA-8081	60.3			09/16/2014	CAS
4,4'-DDE - BS	EPA-8081	69.4			09/16/2014	CAS
Dieldrin - BS	EPA-8081	69.4			09/16/2014	CAS
Endrin - BS	EPA-8081	71.7			09/16/2014	CAS
4,4'-DDD - BS	EPA-8081	70.8			09/16/2014	CAS
Endosulfan II - BS	EPA-8081	67.3			09/16/2014	CAS
4,4'-DDT - BS	EPA-8081	73.7			09/16/2014	CAS
Endrin Aldehyde - BS	EPA-8081	73.7			09/16/2014	CAS
Endosulfan Sulfate - BS	EPA-8081	75.8			09/16/2014	CAS
Methoxychlor - BS	EPA-8081	80.4			09/16/2014	CAS
Toxaphene - BS	EPA-8081	73.4			09/16/2014	CAS

ALS Test Batch ID: R241227 - Soil by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) - BS	EPA-7196	103			09/20/2014	RAL
Chromium (VI) - BSD	EPA-7196	103	0		09/20/2014	RAL

ALS Test Batch ID: R241241 - Soil by EPA-300.0M

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Fluoride - BS	EPA-300.0M	92.0			09/17/2014	GAP
Fluoride - BSD	EPA-300.0M	91.0	1		09/17/2014	GAP
Nitrate as N - BS	EPA-300.0M	104			09/17/2014	GAP
Nitrate as N - BSD	EPA-300.0M	104	0		09/17/2014	GAP
Nitrite as N - BS	EPA-300.0M	93.5			09/17/2014	GAP
Nitrite as N - BSD	EPA-300.0M	87.0	7		09/17/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R241013 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7471	103			09/17/2014	RAL
Mercury - BSD	EPA-7471	103	0		09/17/2014	RAL

ALS Test Batch ID: R241252 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7471	105			09/09/2014	RAL
Mercury - BSD	EPA-7471	104	1		09/09/2014	RAL

ALS Test Batch ID: 85877 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-6020	102			09/09/2014	RAL
Arsenic - BSD	EPA-6020	97.9	4		09/09/2014	RAL
Barium - BS	EPA-6020	107			09/09/2014	RAL
Barium - BSD	EPA-6020	104	3		09/09/2014	RAL
Cadmium - BS	EPA-6020	104			09/09/2014	RAL
Cadmium - BSD	EPA-6020	102	3		09/09/2014	RAL
Chromium - BS	EPA-6020	99.7			09/09/2014	RAL
Chromium - BSD	EPA-6020	96.8	3		09/09/2014	RAL
Iron - BS	EPA-6020	106			09/09/2014	RAL
Iron - BSD	EPA-6020	103	3		09/09/2014	RAL
Lead - BS	EPA-6020	106			09/09/2014	RAL
Lead - BSD	EPA-6020	103	2		09/09/2014	RAL
Manganese - BS	EPA-6020	99.8			09/09/2014	RAL
Manganese - BSD	EPA-6020	97.1	3		09/09/2014	RAL
Selenium - BS	EPA-6020	101			09/09/2014	RAL
Selenium - BSD	EPA-6020	97.0	4		09/09/2014	RAL
Silver - BS	EPA-6020	110			09/09/2014	RAL
Silver - BSD	EPA-6020	105	4		09/09/2014	RAL
Sodium - BS	EPA-6020	102			09/09/2014	RAL
Sodium - BSD	EPA-6020	100	1		09/09/2014	RAL

ALS Test Batch ID: 86114 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-6020	101			09/17/2014	RAL
Arsenic - BSD	EPA-6020	104	3		09/17/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV14090022
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Barium - BS	EPA-6020	105			09/17/2014	RAL
Barium - BSD	EPA-6020	109	4		09/17/2014	RAL
Cadmium - BS	EPA-6020	102			09/17/2014	RAL
Cadmium - BSD	EPA-6020	106	3		09/17/2014	RAL
Chromium - BS	EPA-6020	102			09/17/2014	RAL
Chromium - BSD	EPA-6020	106	4		09/17/2014	RAL
Iron - BS	EPA-6020	107			09/17/2014	RAL
Iron - BSD	EPA-6020	110	3		09/17/2014	RAL
Lead - BS	EPA-6020	104			09/17/2014	RAL
Lead - BSD	EPA-6020	108	3		09/17/2014	RAL
Manganese - BS	EPA-6020	102			09/17/2014	RAL
Manganese - BSD	EPA-6020	106	3		09/17/2014	RAL
Selenium - BS	EPA-6020	99.9			09/17/2014	RAL
Selenium - BSD	EPA-6020	103	3		09/17/2014	RAL
Silver - BS	EPA-6020	111			09/17/2014	RAL
Silver - BSD	EPA-6020	114	3		09/17/2014	RAL
Sodium - BS	EPA-6020	103			09/17/2014	RAL
Sodium - BSD	EPA-6020	108	4		09/17/2014	RAL

APPROVED BY

Laboratory Director

EV14090022

Date 9/3/14
Page 1 of 1

Chain-of-Custody Record

Project Name Yekins Landfill Project No. 1148008.0/0.011
 Project Location/Event Yekins, WA
 Sampler's Name Steve Shaw
 Project Contact Jeffrey Fellows
 Send Results To J. Fellows, S. Shaw, Anne Helwisa,

Sample I.D.	Date	Time	Matrix	No. of Containers	TPH-HCID	NWPH-DX	NWPH-G	Met-1, *	Hex Chloro (3196)	PBBs (8082)	VOCs (8260)	PAHs (8230)	Fluoride-Nitrate (3005)	PH (9045)	Testing Parameters	Observations/Comments	Turnaround Time
MW-105 (2.5-3.5) 090214	9/2/14	1150	SOL	4	X	A	A	X	X	X	X	X	X	X		- Allow water samples to settle, collect aliquot from clear portion - <u>SWS 9/3/14</u>	<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated
MW-105 (2.5-19) 090214	9/2/14	1410	I	5	X	A	A	X	X	X	X	X	X	X		X NWTPH-DX - run acid wash/silica gel cleanup <u>AND</u>	
MW-104 (2.5-3) 090314	9/3/14		I	4	X	A	A	X	X	X	X	X	X	X		X NWTPH-DX without silica gel - run samples standardized to <u>clean</u>	
MW-104 (2.5-3) 090214	9/3/14	0815	I	5	X	A	A	X	X	X	X	X	X	X			
MW-104 (19-20) 090314	9/3/14	1100	I	5	X	A	A	X	X	X	X	X	X	X			

Analyze for EPH if no specific product identified
 VOC/BTEX/VPH (sol):
 non-preserved
 preserved w/methanol
 preserved w/sodium bisulfate
 Freeze upon receipt
 Dissolved metal water samples field filtered

Other Met-1s: AS, Ba, Cd, Cr, Pb, Fe, Hg, Se, Ag, Ni, + Hg (7471)
A = Archive

Special Shipment/Handling or Storage Requirements 1 Cool + Ice
 Method of Shipment Fedex delivery

Relinquished by	Received by
Signature <u>[Signature]</u> Printed Name <u>STEVEN W SINAR</u> Company <u>Landau Assoc.</u> Date <u>9/3/14</u> Time <u>14:37</u>	Signature <u>[Signature]</u> Printed Name <u>Shawn Robinson</u> Company <u>ALS</u> Date <u>9/4/14</u> Time <u>9:10 am</u>
Signature _____ Printed Name _____ Company _____ Date _____ Time _____	Signature _____ Printed Name _____ Company _____ Date _____ Time _____

Relinquished by: Signature, Printed Name, Company, Date, Time
 Received by: Signature, Printed Name, Company, Date, Time

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV14090022

Project: Yakima Landfill / # 1148008.010.011

Received Date: 9/4/14 Received Time: 9:10 am By: SM

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express 1st overnight

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals on outside of sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>7</u>			
Where? <u>outside cooler</u>			
Custody seal date: <u>9/3/14</u>			
Seal name: <u>Landau</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Received per 5035 low kits.

Were VOA vials checked for absence of air bubbles?
Bubbles present in sample #: _____

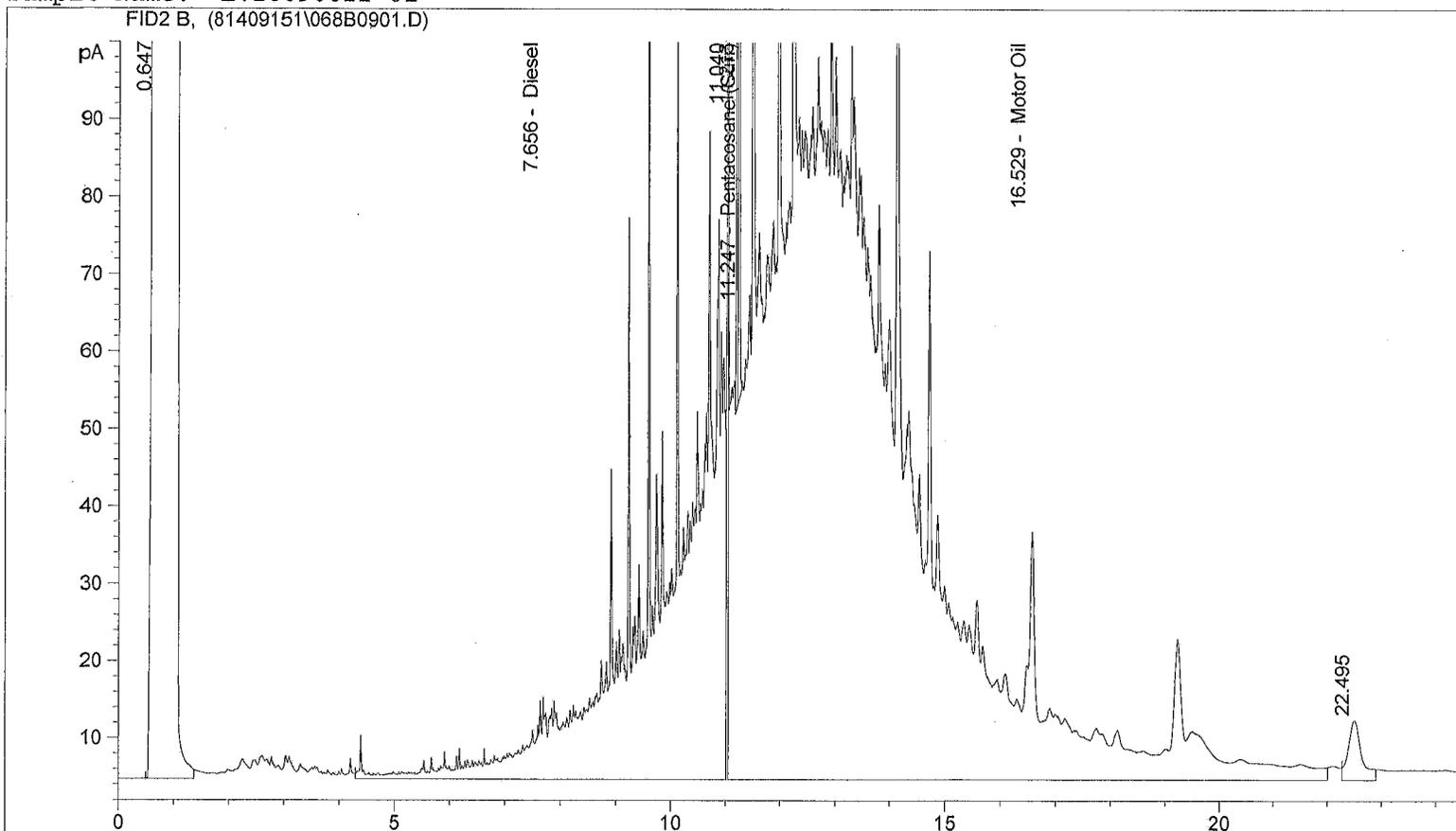
Temperature of cooler upon receipt: 4.3° on ice Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

Sample Name: EV14090022-01



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	5024.534	344.972
11.247		Pentacosane (Surr)	165.833	5.859
16.529		Motor Oil	16815.611	1329.858

597.

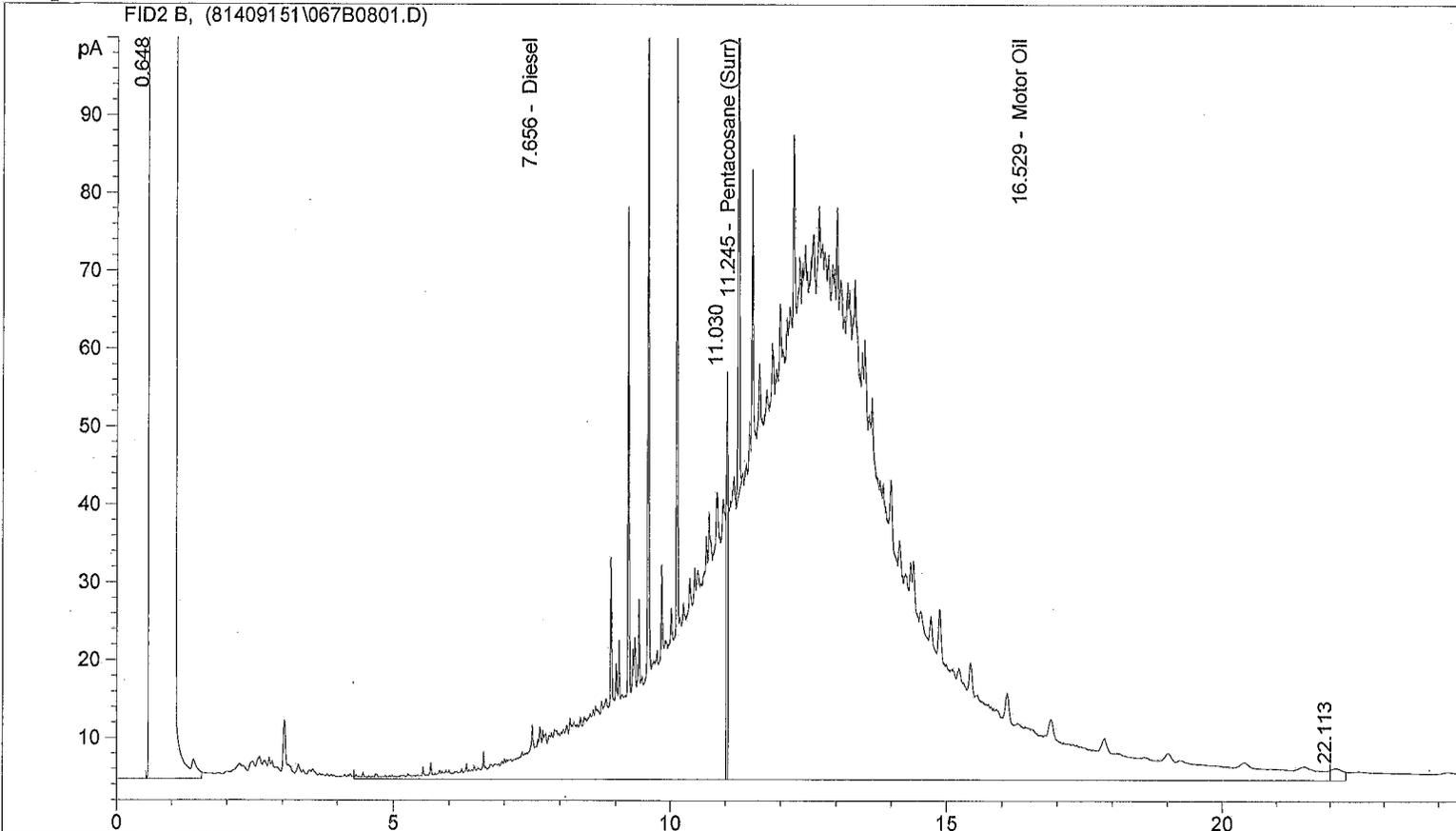
26.21g

$D < 25 \text{ mg/kg}$

$0 = 1329.858 \text{ ug/mL} \times \frac{10 \text{ mL}}{26.21 \text{ g}} = 510 \text{ mg/kg}$ Luke Oil

09.17.14ES

Sample Name: EV14090022-01 SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	3661.323	251.378
11.245		Pentacosane (Surr)	164.538	5.813
16.529		Motor Oil	12630.466	998.877

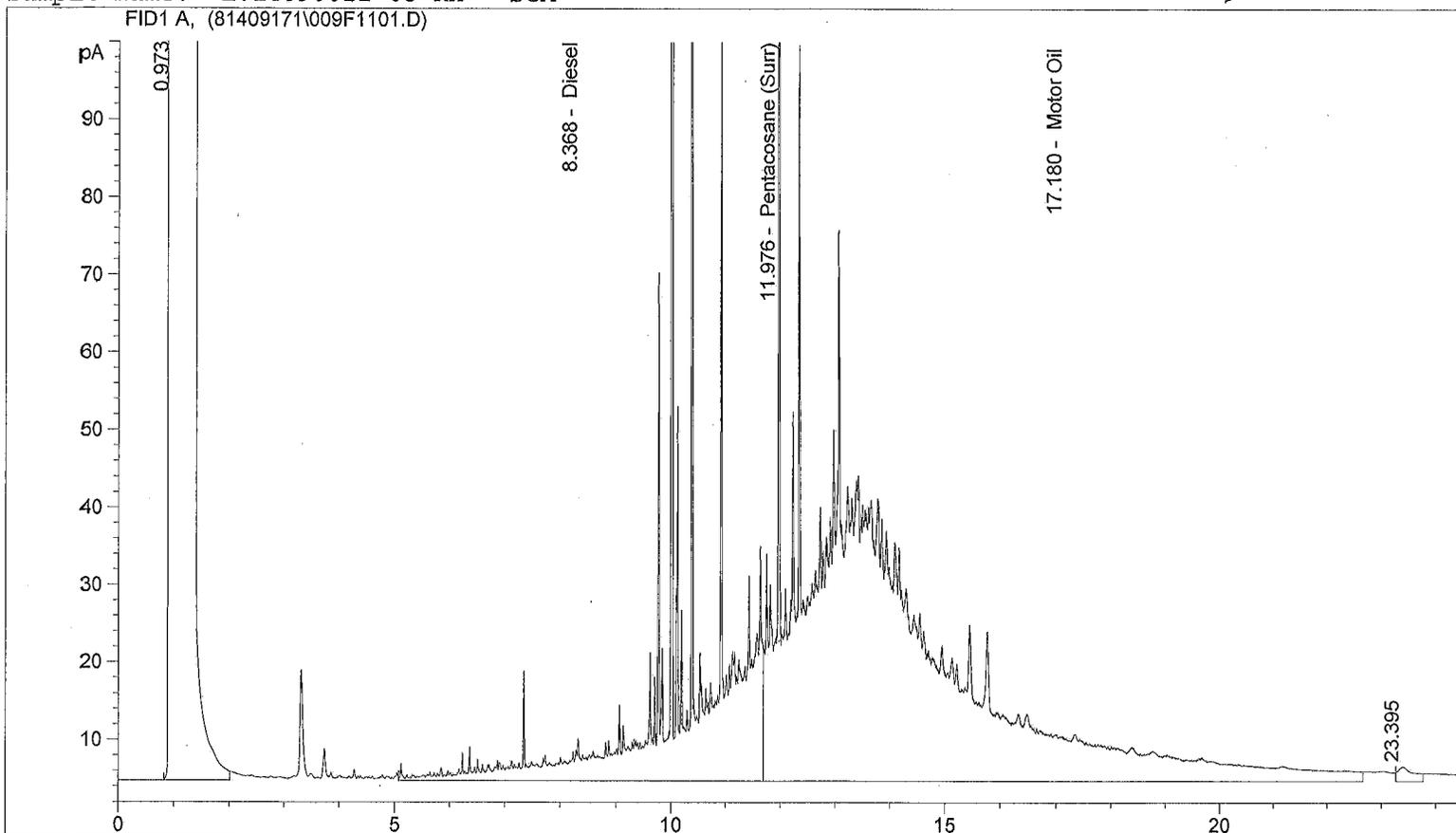
58%

26.21 g

$\Delta < 25 \text{ mg/kg}$

$$0 = 998.877 \text{ } \mu\text{g/mL} \times \frac{10 \text{ mL}}{26.21 \text{ g}} = 380 \text{ mg/kg Lube Oil}$$

Sample Name: EV14090022-03 RX SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	3896.370	309.107
11.976		Pentacosane (Surr)	225.385	9.291
17.180		Motor Oil	7262.000	668.746

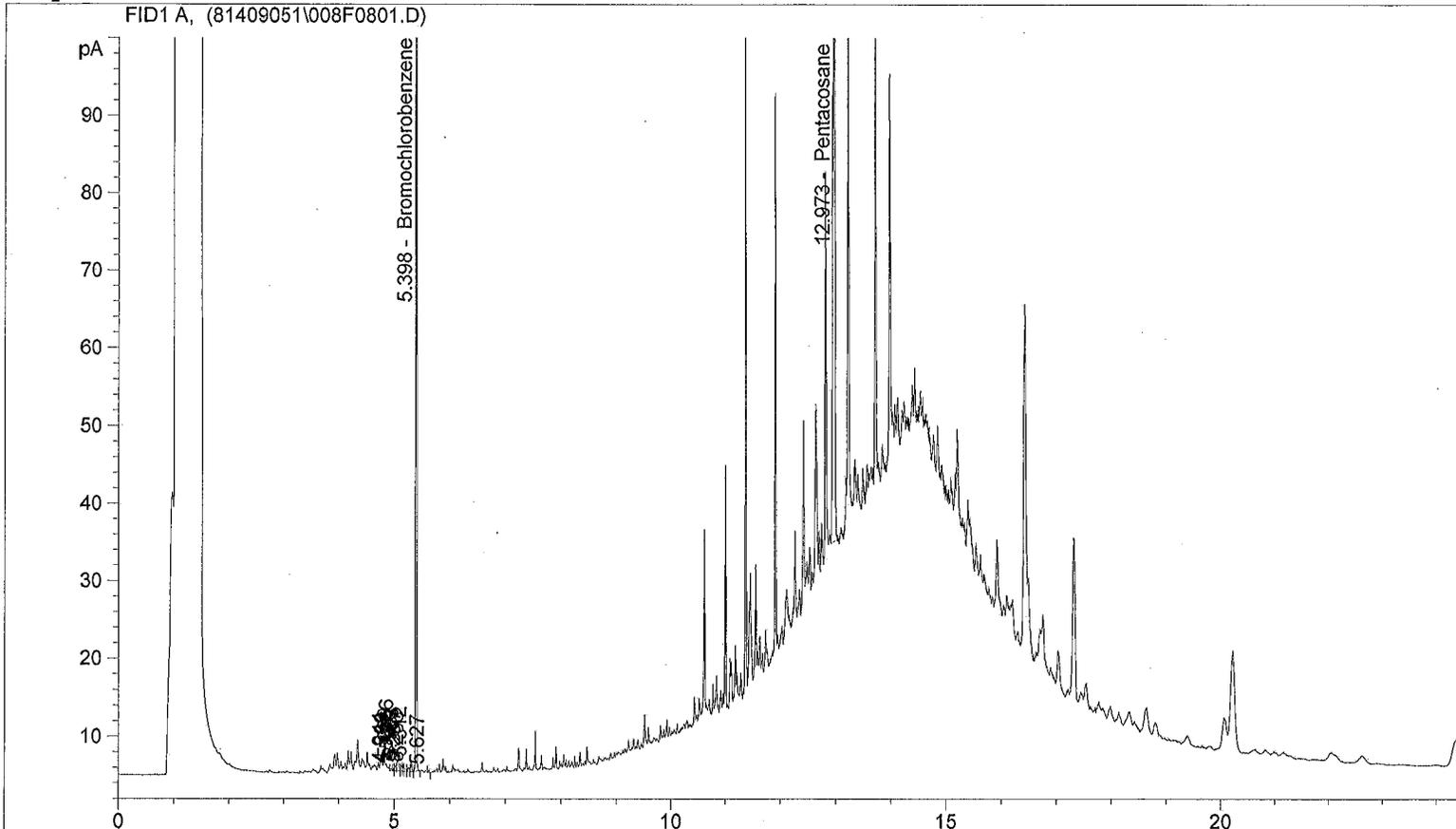
21.97g

$D < 25 \text{ mg/kg}$

$$O = 668.746 \text{ g/mL} \times \frac{10 \text{ mL}}{21.97 \text{ g}} = 300 \text{ mg/kg Leuke Oil}$$

09.18.14 EBS

Sample Name: EV14090022-01
 FID1 A, (81409051\008F0801.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.398	FID1 A,	Bromochlorobenzene	381.807	40.259
12.973		Pentacosane	274.344	13.178

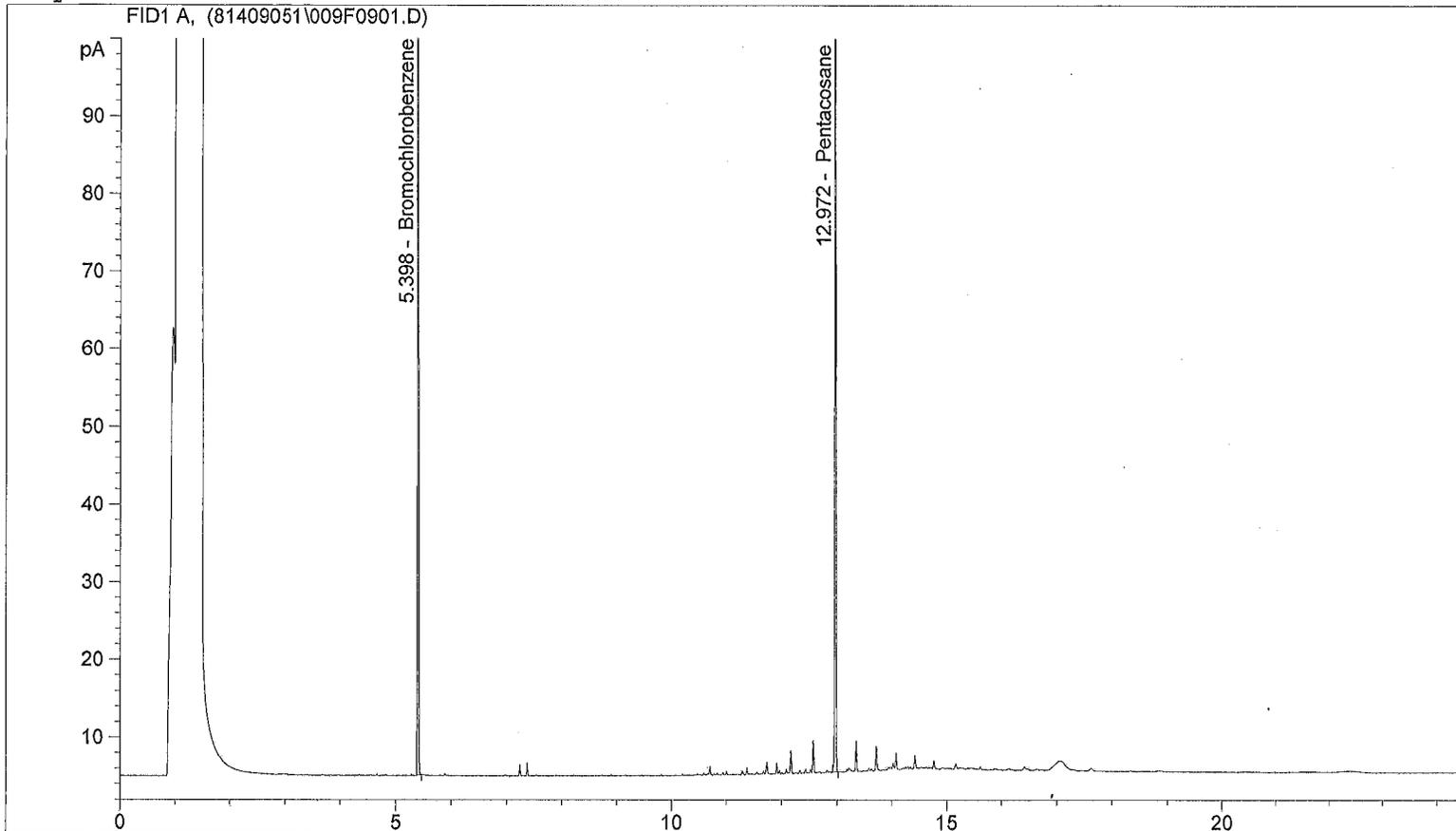
81%
132%

G < 20 mg/kg
 D < 50 mg/kg
 O > 100 mg/kg Lubric Oil

REVIEWED BY *AB*
 & DATE *9/10/14*

09.05.14

Sample Name: EV14090022-02
 FID1 A, (81409051\009F0901.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.398	FID1 A,	Bromochlorobenzene	370.931	39.112
12.972		Pentacosane	182.653	8.773

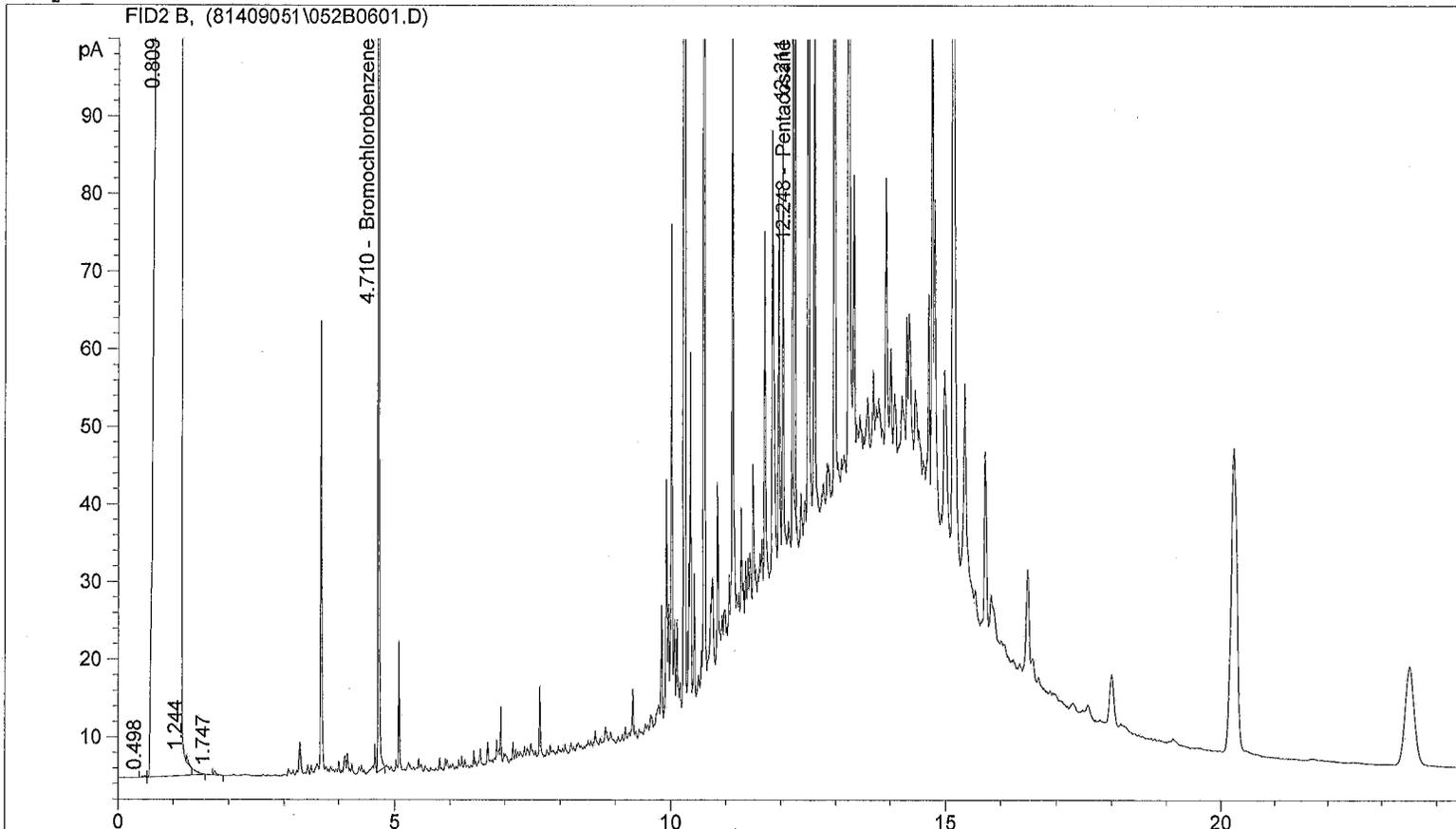
78%
88%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

REVIEWED BY *MS*
 & DATE *9/10/14*

09.05.14EJ

Sample Name: EV14090022-03
 FID2 B, (81409051\052B0601.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.710	FID2 B,	Bromochlorobenzene	425.968	39.389
12.248		Pentacosane	216.432	8.573

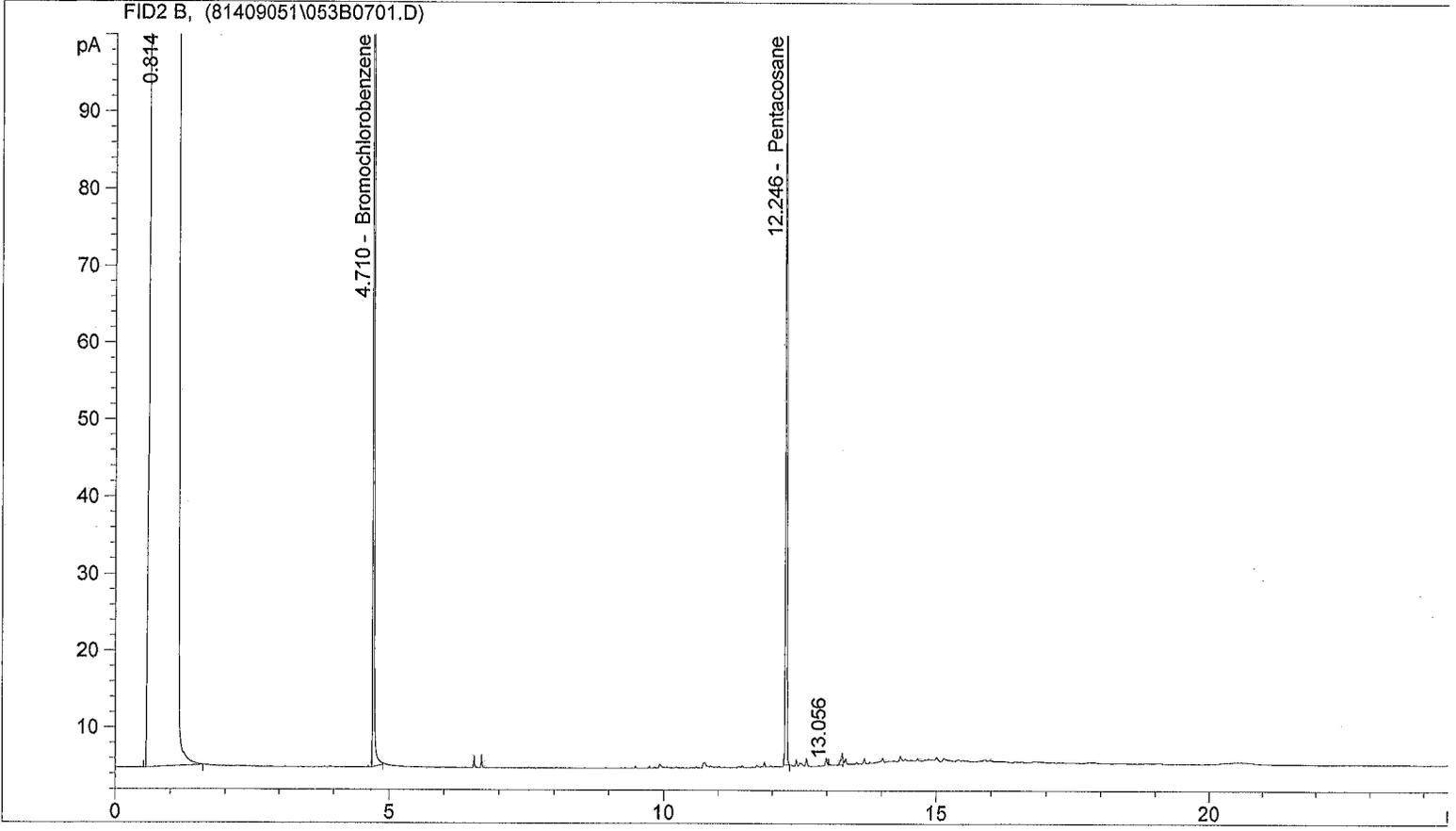
79%
86%

G < 20 mg/kg
 D < 50 mg/kg
 O > 100 mg/kg Lubricant Oil

REVIEWED BY AS
 & DATE 9/10/14

09-05-14 EBS

Sample Name: EV14090022-04



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
4.710	FID2 B,	Bromochlorobenzene	414.587	38.337	77%
12.246		Pentacosane	198.528	7.864	79%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

REVIEWED BY BS
 & DATE 9/10/14

09.05.14 E



August 10, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On September 4th, 4 samples were received by our laboratory and assigned our laboratory project number EV14090022. The project was identified as your Yakima Landfill / #1148008.010.014. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report is being re-issued with lowered reporting limits for Chloroform. No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS JOB#: EV14090022
Edmonds, WA 98020 ALS SAMPLE#: EV14090022-02
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/04/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/2/2014 2:10:00 PM
CLIENT SAMPLE ID MW-105 (17.5-19) 090214 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	09/10/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS JOB#: EV14090022
Edmonds, WA 98020 ALS SAMPLE#: EV14090022-04
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/04/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/3/2014 11:00:00 AM
CLIENT SAMPLE ID MW-104 (19-20) 090314 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	09/10/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS SDG#: EV14090022
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091014S - Batch 85939 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	QUAL	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U		UG/KG	8.0	09/10/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS SDG#: EV14090022
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 85939 - Soil by EPA-8260

Table with 6 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows include 1,1-Dichloroethene - BS, 1,1-Dichloroethene - BSD, Benzene - BS, Benzene - BSD, Toluene - BS, Toluene - BSD, Chlorobenzene - BS, Chlorobenzene - BSD.

APPROVED BY

Handwritten signature of Paul Bagum

Laboratory Director



September 30, 2014

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On September 6th, 4 samples were received by our laboratory and assigned our laboratory project number EV14090040. The project was identified as your Yakima Landfill / #1148008.010.014. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-01
CLIENT SAMPLE ID	MW-108 (2.5-3.5)-090414	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/4/2014 8:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/08/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/08/2014	EBS
HCID-Oil Range	NWTPH-HCID	>100	100	1	MG/KG	09/08/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/15/2014	EBS
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	09/15/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	130	50	1	MG/KG	09/15/2014	EBS
TPH-Oil Range	NWTPH-DX	160	50	1	MG/KG	09/15/2014	EBS
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	65	1	ug/Kg	09/17/2014	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoranthene	EPA-8270 SIM	23	20	1	ug/Kg	09/17/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	52	20	1	ug/Kg	09/17/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/17/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Mercury	EPA-7471	0.12	0.020	1	MG/KG	09/17/2014	RAL
Arsenic	EPA-6020	3.5	1.0	5	MG/KG	09/18/2014	RAL
Barium	EPA-6020	140	0.50	5	MG/KG	09/18/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/18/2014	RAL
Chromium	EPA-6020	17	0.50	5	MG/KG	09/18/2014	RAL
Iron	EPA-6020	28000	50	5	MG/KG	09/18/2014	RAL
Lead	EPA-6020	26	0.50	5	MG/KG	09/18/2014	RAL
Manganese	EPA-6020	570	0.50	5	MG/KG	09/18/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/18/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-01
CLIENT SAMPLE ID	MW-108 (2.5-3.5)-090414	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/4/2014 8:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver	EPA-6020	U	0.50	5	MG/KG	09/18/2014	RAL
Sodium	EPA-6020	650	50	5	MG/KG	09/18/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	83.5	09/08/2014	EBS
C25	NWTPH-HCID	96.4	09/08/2014	EBS
C25	NWTPH-DX w/ SGA	69.3	09/15/2014	EBS
C25	NWTPH-DX	68.9	09/15/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	106	09/17/2014	GAP
Terphenyl-d14	EPA-8270 SIM	64.6	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-02
CLIENT SAMPLE ID	MW-108 (21.5-22.5)-090414	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/4/2014 10:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/08/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/08/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/08/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Vinyl Chloride	EPA-8260	U	0.032	1	ug/Kg	09/10/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromodichloromethane	EPA-8260	U	0.78	1	ug/Kg	09/10/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.83	1	ug/Kg	09/10/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-02
CLIENT SAMPLE ID	MW-108 (21.5-22.5)-090414	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/4/2014 10:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.86	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.90	1	ug/Kg	09/10/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	55	1	ug/Kg	09/09/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-02
CLIENT SAMPLE ID	MW-108 (21.5-22.5)-090414	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/4/2014 10:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	09/09/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	27	1	ug/Kg	09/09/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Aniline	EPA-8270	U	47	1	ug/Kg	09/09/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	98	1	ug/Kg	09/09/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	95	1	ug/Kg	09/09/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/09/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/09/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-02
CLIENT SAMPLE ID	MW-108 (21.5-22.5)-090414	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/4/2014 10:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/09/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/09/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	40	1	ug/Kg	09/09/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	38	1	ug/Kg	09/09/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/09/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	22	1	ug/Kg	09/09/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	170	1	ug/Kg	09/09/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-02
CLIENT SAMPLE ID	MW-108 (21.5-22.5)-090414	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/4/2014 10:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
PCB-1016	EPA-8082	U	0.0062	1	MG/KG	09/16/2014	CAS
PCB-1221	EPA-8082	U	0.013	1	MG/KG	09/16/2014	CAS
PCB-1232	EPA-8082	U	0.0062	1	MG/KG	09/16/2014	CAS
PCB-1242	EPA-8082	U	0.0062	1	MG/KG	09/16/2014	CAS
PCB-1248	EPA-8082	U	0.0062	1	MG/KG	09/16/2014	CAS
PCB-1254	EPA-8082	U	0.0062	1	MG/KG	09/16/2014	CAS
PCB-1260	EPA-8082	U	0.0062	1	MG/KG	09/16/2014	CAS
A-BHC	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
G-BHC	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
B-BHC	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Heptachlor	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
D-BHC	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Aldrin	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Chlordane	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Endosulfan I	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
4,4'-DDE	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Dieldrin	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Endrin	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
4,4'-DDD	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Endosulfan II	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
4,4'-DDT	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Methoxychlor	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Toxaphene	EPA-8081	U	0.16	1	MG/KG	09/16/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/20/2014	RAL
pH	EPA-9045	7.98	± 0.01	1	S.U.	09/08/2014	SMR
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/17/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Mercury	EPA-7471	U	0.020	1	MG/KG	09/09/2014	RAL
Arsenic	EPA-6020	4.1	1.0	5	MG/KG	09/09/2014	RAL
Barium	EPA-6020	73	0.50	5	MG/KG	09/09/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/09/2014	RAL
Chromium	EPA-6020	41	0.50	5	MG/KG	09/09/2014	RAL
Iron	EPA-6020	23000	50	5	MG/KG	09/09/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-02
CLIENT SAMPLE ID	MW-108 (21.5-22.5)-090414	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/4/2014 10:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	3.5	0.50	5	MG/KG	09/09/2014	RAL
Manganese	EPA-6020	240	0.50	5	MG/KG	09/09/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/09/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	09/09/2014	RAL
Sodium	EPA-6020	990	50	5	MG/KG	09/09/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	80.6	09/08/2014	EBS
C25	NWTPH-HCID	88.2	09/08/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	99.4	09/10/2014	DLC
Toluene-d8	EPA-8260	99.7	09/10/2014	DLC
4-Bromofluorobenzene	EPA-8260	106	09/10/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	117	09/09/2014	GAP
Terphenyl-d14	EPA-8270 SIM	93.7	09/09/2014	GAP
2-Fluorophenol	EPA-8270	93.9	09/09/2014	GAP
Phenol-d5	EPA-8270	87.5	09/09/2014	GAP
Nitrobenzene-d5	EPA-8270	84.4	09/09/2014	GAP
2-Fluorobiphenyl	EPA-8270	95.6	09/09/2014	GAP
2,4,6-Tribromophenol	EPA-8270	104	09/09/2014	GAP
Terphenyl-d14	EPA-8270	97.4	09/09/2014	GAP
DCB	EPA-8082	64.0	09/16/2014	CAS
TCMX	EPA-8081	58.0	09/16/2014	CAS
DCB	EPA-8081	61.0	09/16/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-03
CLIENT SAMPLE ID	MW-103 (20.5-21.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/08/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/08/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/08/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Vinyl Chloride	EPA-8260	U	0.033	1	ug/Kg	09/10/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromodichloromethane	EPA-8260	U	0.79	1	ug/Kg	09/10/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.84	1	ug/Kg	09/10/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-03
CLIENT SAMPLE ID	MW-103 (20.5-21.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.87	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.92	1	ug/Kg	09/10/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	61	1	ug/Kg	09/09/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-03
CLIENT SAMPLE ID	MW-103 (20.5-21.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	09/09/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	23	1	ug/Kg	09/09/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Aniline	EPA-8270	U	40	1	ug/Kg	09/09/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	83	1	ug/Kg	09/09/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	80	1	ug/Kg	09/09/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/09/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	210	1	ug/Kg	09/09/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/09/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-03
CLIENT SAMPLE ID	MW-103 (20.5-21.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/09/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/09/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	34	1	ug/Kg	09/09/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	32	1	ug/Kg	09/09/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/09/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	19	1	ug/Kg	09/09/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	150	1	ug/Kg	09/09/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-03
CLIENT SAMPLE ID	MW-103 (20.5-21.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
PCB-1016	EPA-8082	U	0.0056	1	MG/KG	09/16/2014	CAS
PCB-1221	EPA-8082	U	0.012	1	MG/KG	09/16/2014	CAS
PCB-1232	EPA-8082	U	0.0056	1	MG/KG	09/16/2014	CAS
PCB-1242	EPA-8082	U	0.0056	1	MG/KG	09/16/2014	CAS
PCB-1248	EPA-8082	U	0.0056	1	MG/KG	09/16/2014	CAS
PCB-1254	EPA-8082	U	0.0056	1	MG/KG	09/16/2014	CAS
PCB-1260	EPA-8082	U	0.0056	1	MG/KG	09/16/2014	CAS
A-BHC	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
G-BHC	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
B-BHC	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Heptachlor	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
D-BHC	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Aldrin	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Chlordane	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Endosulfan I	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
4,4'-DDE	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Dieldrin	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Endrin	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
4,4'-DDD	EPA-8081	0.012	0.0028	1	MG/KG	09/16/2014	CAS
Endosulfan II	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
4,4'-DDT	EPA-8081	0.0069	0.0028	1	MG/KG	09/16/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Methoxychlor	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Toxaphene	EPA-8081	U	0.14	1	MG/KG	09/16/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/20/2014	RAL
pH	EPA-9045	7.53	± 0.01	1	S.U.	09/08/2014	SMR
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/17/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Mercury	EPA-7471	0.028	0.020	1	MG/KG	09/09/2014	RAL
Arsenic	EPA-6020	1.8	1.0	5	MG/KG	09/09/2014	RAL
Barium	EPA-6020	56	0.50	5	MG/KG	09/09/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/09/2014	RAL
Chromium	EPA-6020	14	0.50	5	MG/KG	09/09/2014	RAL
Iron	EPA-6020	23000	50	5	MG/KG	09/09/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-03
CLIENT SAMPLE ID	MW-103 (20.5-21.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	3.1	0.50	5	MG/KG	09/09/2014	RAL
Manganese	EPA-6020	250	0.50	5	MG/KG	09/09/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/09/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	09/09/2014	RAL
Sodium	EPA-6020	530	50	5	MG/KG	09/09/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	78.3	09/08/2014	EBS
C25	NWTPH-HCID	78.1	09/08/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	99.5	09/10/2014	DLC
Toluene-d8	EPA-8260	96.7	09/10/2014	DLC
4-Bromofluorobenzene	EPA-8260	101	09/10/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	135 GS1	09/09/2014	GAP
Terphenyl-d14	EPA-8270 SIM	115	09/09/2014	GAP
2-Fluorophenol	EPA-8270	94.1	09/09/2014	GAP
Phenol-d5	EPA-8270	89.0	09/09/2014	GAP
Nitrobenzene-d5	EPA-8270	83.8	09/09/2014	GAP
2-Fluorobiphenyl	EPA-8270	93.1	09/09/2014	GAP
2,4,6-Tribromophenol	EPA-8270	102	09/09/2014	GAP
Terphenyl-d14	EPA-8270	94.0	09/09/2014	GAP
DCB	EPA-8082	76.0	09/16/2014	CAS
TCMX	EPA-8081	64.0	09/16/2014	CAS
DCB	EPA-8081	65.0	09/16/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
 GS1 - Surrogate outside of control limits due to matrix effect.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-04
CLIENT SAMPLE ID	MW-101 (17.5-18.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/08/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/08/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/08/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Vinyl Chloride	EPA-8260	U	0.042	1	ug/Kg	09/10/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromodichloromethane	EPA-8260	U	1.0	1	ug/Kg	09/10/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	1.1	1	ug/Kg	09/10/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-04
CLIENT SAMPLE ID	MW-101 (17.5-18.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	1.1	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	1.2	1	ug/Kg	09/10/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	58	1	ug/Kg	09/09/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-04
CLIENT SAMPLE ID	MW-101 (17.5-18.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/09/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	09/09/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	25	1	ug/Kg	09/09/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Aniline	EPA-8270	U	42	1	ug/Kg	09/09/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	89	1	ug/Kg	09/09/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
3&4-Methylphenol	EPA-8270	400	100	1	ug/Kg	09/09/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	86	1	ug/Kg	09/09/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/09/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	230	1	ug/Kg	09/09/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/09/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-04
CLIENT SAMPLE ID	MW-101 (17.5-18.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/09/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/09/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	36	1	ug/Kg	09/09/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	34	1	ug/Kg	09/09/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/09/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	20	1	ug/Kg	09/09/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	160	1	ug/Kg	09/09/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	140	100	1	ug/Kg	09/09/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-04
CLIENT SAMPLE ID	MW-101 (17.5-18.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
PCB-1016	EPA-8082	U	0.0059	1	MG/KG	09/16/2014	CAS
PCB-1221	EPA-8082	U	0.012	1	MG/KG	09/16/2014	CAS
PCB-1232	EPA-8082	U	0.0059	1	MG/KG	09/16/2014	CAS
PCB-1242	EPA-8082	U	0.0059	1	MG/KG	09/16/2014	CAS
PCB-1248	EPA-8082	U	0.0059	1	MG/KG	09/16/2014	CAS
PCB-1254	EPA-8082	U	0.0059	1	MG/KG	09/16/2014	CAS
PCB-1260	EPA-8082	U	0.0059	1	MG/KG	09/16/2014	CAS
A-BHC	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
G-BHC	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
B-BHC	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Heptachlor	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
D-BHC	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Aldrin	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Chlordane	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endosulfan I	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
4,4'-DDE	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Dieldrin	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endrin	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
4,4'-DDD	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endosulfan II	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
4,4'-DDT	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Methoxychlor	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Toxaphene	EPA-8081	U	0.15	1	MG/KG	09/16/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/20/2014	RAL
pH	EPA-9045	6.71	± 0.01	1	S.U.	09/08/2014	SMR
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/17/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Mercury	EPA-7471	0.036	0.020	1	MG/KG	09/09/2014	RAL
Arsenic	EPA-6020	1.4	1.0	5	MG/KG	09/09/2014	RAL
Barium	EPA-6020	70	0.50	5	MG/KG	09/09/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/09/2014	RAL
Chromium	EPA-6020	14	0.50	5	MG/KG	09/09/2014	RAL
Iron	EPA-6020	22000	50	5	MG/KG	09/09/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-04
CLIENT SAMPLE ID	MW-101 (17.5-18.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	3.7	0.50	5	MG/KG	09/09/2014	RAL
Manganese	EPA-6020	240	0.50	5	MG/KG	09/09/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/09/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	09/09/2014	RAL
Sodium	EPA-6020	380	50	5	MG/KG	09/09/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	76.1	09/08/2014	EBS
C25	NWTPH-HCID	90.5	09/08/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	101	09/10/2014	DLC
Toluene-d8	EPA-8260	97.4	09/10/2014	DLC
4-Bromofluorobenzene	EPA-8260	103	09/10/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	132 GS1	09/09/2014	GAP
Terphenyl-d14	EPA-8270 SIM	8.61	09/09/2014	GAP
2-Fluorophenol	EPA-8270	108	09/09/2014	GAP
Phenol-d5	EPA-8270	104	09/09/2014	GAP
Nitrobenzene-d5	EPA-8270	96.3	09/09/2014	GAP
2-Fluorobiphenyl	EPA-8270	105	09/09/2014	GAP
2,4,6-Tribromophenol	EPA-8270	122	09/09/2014	GAP
Terphenyl-d14	EPA-8270	101	09/09/2014	GAP
DCB	EPA-8082	69.0	09/16/2014	CAS
TCMX	EPA-8081	60.0	09/16/2014	CAS
DCB	EPA-8081	61.0	09/16/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
 GS1 - Surrogate outside of control limits due to matrix effect.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 9/30/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090040
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-090814S - Batch 85850 - Soil by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/08/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/08/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/08/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091114S - Batch 85990 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	09/11/2014	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	09/11/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091014S - Batch 85939 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Vinyl Chloride	EPA-8260	U	0.029	1	ug/Kg	09/10/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-091014S - Batch 85939 - Soil by EPA-8260

Benzene	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromodichloromethane	EPA-8260	U	0.69	1	ug/Kg	09/10/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.74	1	ug/Kg	09/10/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.76	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.80	1	ug/Kg	09/10/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 9/30/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090040
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091014S - Batch 85939 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-090314S - Batch 85772 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	77	1	ug/Kg	09/04/2014	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/04/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091114S - Batch 86097 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	77	1	ug/Kg	09/18/2014	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-091114S - Batch 86097 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-090914S - Batch 85914 - Soil by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	200	1	ug/Kg	09/09/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	33	1	ug/Kg	09/09/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Aniline	EPA-8270	U	58	1	ug/Kg	09/09/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	120	1	ug/Kg	09/09/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	120	1	ug/Kg	09/09/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/09/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	310	1	ug/Kg	09/09/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-090914S - Batch 85914 - Soil by EPA-8270

4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/09/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/09/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/09/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	49	1	ug/Kg	09/09/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	46	1	ug/Kg	09/09/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/09/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	27	1	ug/Kg	09/09/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/09/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	210	1	ug/Kg	09/09/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 9/30/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090040
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-090914S - Batch 85914 - Soil by EPA-8270

Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/09/2014	GAP
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U - Analyte analyzed for but not detected at level above reporting limit.

MB1-09/16/2014 - Batch R241295 - Soil by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0062	1	MG/KG	09/16/2014	CAS
PCB-1221	EPA-8082	U	0.012	1	MG/KG	09/16/2014	CAS
PCB-1232	EPA-8082	U	0.0056	1	MG/KG	09/16/2014	CAS
PCB-1242	EPA-8082	U	0.0062	1	MG/KG	09/16/2014	CAS
PCB-1248	EPA-8082	U	0.0062	1	MG/KG	09/16/2014	CAS
PCB-1254	EPA-8082	U	0.0059	1	MG/KG	09/16/2014	CAS
PCB-1260	EPA-8082	U	0.0062	1	MG/KG	09/16/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-09/16/2014 - Batch R241291 - Soil by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
G-BHC	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
B-BHC	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Heptachlor	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
D-BHC	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Aldrin	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Chlordane	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endosulfan I	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
4,4'-DDE	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Dieldrin	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Endrin	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
4,4'-DDD	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Endosulfan II	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
4,4'-DDT	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0031	1	MG/KG	09/16/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0028	1	MG/KG	09/16/2014	CAS
Methoxychlor	EPA-8081	U	0.0029	1	MG/KG	09/16/2014	CAS
Toxaphene	EPA-8081	U	0.14	1	MG/KG	09/16/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 9/30/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090040
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MBLK-9202014 - Batch R241227 - Soil by EPA-7196

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/20/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9172014 - Batch R241241 - Soil by EPA-300.0M

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/17/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9172014 - Batch R241013 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	0.020	1	MG/KG	09/17/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-992014 - Batch R241252 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	0.020	1	MG/KG	09/09/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-090914S - Batch 85877 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	0.20	1	MG/KG	09/09/2014	RAL
Barium	EPA-6020	U	0.10	1	MG/KG	09/09/2014	RAL
Cadmium	EPA-6020	U	0.10	1	MG/KG	09/09/2014	RAL
Chromium	EPA-6020	U	0.10	1	MG/KG	09/09/2014	RAL
Iron	EPA-6020	U	10	1	MG/KG	09/09/2014	RAL
Lead	EPA-6020	U	0.10	1	MG/KG	09/09/2014	RAL
Manganese	EPA-6020	U	0.10	1	MG/KG	09/09/2014	RAL
Selenium	EPA-6020	U	1.0	1	MG/KG	09/09/2014	RAL
Silver	EPA-6020	U	0.10	1	MG/KG	09/09/2014	RAL
Sodium	EPA-6020	U	10	1	MG/KG	09/09/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 9/30/2014
130 - 2nd Ave. S. ALS SDG#: EV14090040
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091614S - Batch 86114 - Soil by EPA-6020

Table with 8 columns: ANALYTE, METHOD, RESULTS, REPORTING LIMITS, DILUTION FACTOR, UNITS, ANALYSIS DATE, ANALYSIS BY. Rows include Arsenic, Barium, Cadmium, Chromium, Iron, Lead, Manganese, Selenium, Silver, and Sodium.

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 85990 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	84.7			09/11/2014	EBS
TPH-Diesel Range - BSD	NWTPH-DX	87.1	3		09/11/2014	EBS

ALS Test Batch ID: 85939 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	92.6			09/10/2014	DLC
1,1-Dichloroethene - BSD	EPA-8260	89.3	4		09/10/2014	DLC
Benzene - BS	EPA-8260	90.9			09/10/2014	DLC
Benzene - BSD	EPA-8260	87.0	4		09/10/2014	DLC
Trichloroethene - BS	EPA-8260	94.4			09/10/2014	DLC
Trichloroethene - BSD	EPA-8260	90.1	5		09/10/2014	DLC
Toluene - BS	EPA-8260	96.2			09/10/2014	DLC
Toluene - BSD	EPA-8260	91.2	5		09/10/2014	DLC
Chlorobenzene - BS	EPA-8260	97.7			09/10/2014	DLC
Chlorobenzene - BSD	EPA-8260	95.9	2		09/10/2014	DLC

ALS Test Batch ID: 85772 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	EPA-8270 SIM	80.8			09/04/2014	GAP
Naphthalene - BSD	EPA-8270 SIM	73.2	10		09/04/2014	GAP
Acenaphthene - BS	EPA-8270 SIM	85.8			09/04/2014	GAP
Acenaphthene - BSD	EPA-8270 SIM	76.0	12		09/04/2014	GAP
Pentachlorophenol - BS	EPA-8270 SIM	157			09/04/2014	GAP
Pentachlorophenol - BSD	EPA-8270 SIM	131	18		09/04/2014	GAP
Pyrene - BS	EPA-8270 SIM	92.7			09/04/2014	GAP
Pyrene - BSD	EPA-8270 SIM	92.3	0		09/04/2014	GAP
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	78.8			09/04/2014	GAP
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	73.4	7		09/04/2014	GAP

ALS Test Batch ID: 86097 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	EPA-8270 SIM	74.3			09/18/2014	GAP
Naphthalene - BSD	EPA-8270 SIM	84.4	13		09/18/2014	GAP
Acenaphthene - BS	EPA-8270 SIM	90.5			09/18/2014	GAP
Acenaphthene - BSD	EPA-8270 SIM	92.8	3		09/18/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol - BS	EPA-8270 SIM	89.0			09/18/2014	GAP
Pentachlorophenol - BSD	EPA-8270 SIM	123	32		09/18/2014	GAP
Pyrene - BS	EPA-8270 SIM	92.1			09/18/2014	GAP
Pyrene - BSD	EPA-8270 SIM	106	14		09/18/2014	GAP
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	58.2			09/18/2014	GAP
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	64.7	11		09/18/2014	GAP

ALS Test Batch ID: 85914 - Soil by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	81.6			09/09/2014	GAP
Phenol - BSD	EPA-8270	95.1	15		09/09/2014	GAP
2-Chlorophenol - BS	EPA-8270	83.7			09/09/2014	GAP
2-Chlorophenol - BSD	EPA-8270	98.4	16		09/09/2014	GAP
1,4-Dichlorobenzene - BS	EPA-8270	81.5			09/09/2014	GAP
1,4-Dichlorobenzene - BSD	EPA-8270	97.0	17		09/09/2014	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	84.1			09/09/2014	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	93.8	11		09/09/2014	GAP
1,2,4-Trichlorobenzene - BS	EPA-8270	88.4			09/09/2014	GAP
1,2,4-Trichlorobenzene - BSD	EPA-8270	104	17		09/09/2014	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	92.1			09/09/2014	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	100	8		09/09/2014	GAP
Acenaphthene - BS	EPA-8270	96.0			09/09/2014	GAP
Acenaphthene - BSD	EPA-8270	107	11		09/09/2014	GAP
4-Nitrophenol - BS	EPA-8270	90.9			09/09/2014	GAP
4-Nitrophenol - BSD	EPA-8270	90.4	1		09/09/2014	GAP
2,4-Dinitrotoluene - BS	EPA-8270	80.9			09/09/2014	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	81.9	1		09/09/2014	GAP
Pyrene - BS	EPA-8270	104			09/09/2014	GAP
Pyrene - BSD	EPA-8270	114	10		09/09/2014	GAP

ALS Test Batch ID: R241295 - Soil by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	80.5			09/16/2014	CAS
PCB-1260 - BS	EPA-8082	92.5			09/16/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R241291 - Soil by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	71.9			09/16/2014	CAS
G-BHC - BS	EPA-8081	72.4			09/16/2014	CAS
B-BHC - BS	EPA-8081	68.2			09/16/2014	CAS
Heptachlor - BS	EPA-8081	65.6			09/16/2014	CAS
D-BHC - BS	EPA-8081	77.4			09/16/2014	CAS
Aldrin - BS	EPA-8081	63.9			09/16/2014	CAS
Heptachlor Epoxide - BS	EPA-8081	67.0			09/16/2014	CAS
Chlordane - BS	EPA-8081	66.0			09/16/2014	CAS
Endosulfan I - BS	EPA-8081	60.3			09/16/2014	CAS
4,4'-DDE - BS	EPA-8081	69.4			09/16/2014	CAS
Dieldrin - BS	EPA-8081	69.4			09/16/2014	CAS
Endrin - BS	EPA-8081	71.7			09/16/2014	CAS
4,4'-DDD - BS	EPA-8081	70.8			09/16/2014	CAS
Endosulfan II - BS	EPA-8081	67.3			09/16/2014	CAS
4,4'-DDT - BS	EPA-8081	73.7			09/16/2014	CAS
Endrin Aldehyde - BS	EPA-8081	73.7			09/16/2014	CAS
Endosulfan Sulfate - BS	EPA-8081	75.8			09/16/2014	CAS
Methoxychlor - BS	EPA-8081	80.4			09/16/2014	CAS
Toxaphene - BS	EPA-8081	73.4			09/16/2014	CAS

ALS Test Batch ID: R241227 - Soil by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) - BS	EPA-7196	103			09/20/2014	RAL
Chromium (VI) - BSD	EPA-7196	103	0		09/20/2014	RAL

ALS Test Batch ID: R241241 - Soil by EPA-300.0M

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Fluoride - BS	EPA-300.0M	92.0			09/17/2014	GAP
Fluoride - BSD	EPA-300.0M	91.0	1		09/17/2014	GAP
Nitrate as N - BS	EPA-300.0M	104			09/17/2014	GAP
Nitrate as N - BSD	EPA-300.0M	104	0		09/17/2014	GAP
Nitrite as N - BS	EPA-300.0M	93.5			09/17/2014	GAP
Nitrite as N - BSD	EPA-300.0M	87.0	7		09/17/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R241013 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7471	103			09/17/2014	RAL
Mercury - BSD	EPA-7471	103	0		09/17/2014	RAL

ALS Test Batch ID: R241252 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7471	105			09/09/2014	RAL
Mercury - BSD	EPA-7471	104	1		09/09/2014	RAL

ALS Test Batch ID: 85877 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-6020	102			09/09/2014	RAL
Arsenic - BSD	EPA-6020	97.9	4		09/09/2014	RAL
Barium - BS	EPA-6020	107			09/09/2014	RAL
Barium - BSD	EPA-6020	104	3		09/09/2014	RAL
Cadmium - BS	EPA-6020	104			09/09/2014	RAL
Cadmium - BSD	EPA-6020	102	3		09/09/2014	RAL
Chromium - BS	EPA-6020	99.7			09/09/2014	RAL
Chromium - BSD	EPA-6020	96.8	3		09/09/2014	RAL
Iron - BS	EPA-6020	106			09/09/2014	RAL
Iron - BSD	EPA-6020	103	3		09/09/2014	RAL
Lead - BS	EPA-6020	106			09/09/2014	RAL
Lead - BSD	EPA-6020	103	2		09/09/2014	RAL
Manganese - BS	EPA-6020	99.8			09/09/2014	RAL
Manganese - BSD	EPA-6020	97.1	3		09/09/2014	RAL
Selenium - BS	EPA-6020	101			09/09/2014	RAL
Selenium - BSD	EPA-6020	97.0	4		09/09/2014	RAL
Silver - BS	EPA-6020	110			09/09/2014	RAL
Silver - BSD	EPA-6020	105	4		09/09/2014	RAL
Sodium - BS	EPA-6020	102			09/09/2014	RAL
Sodium - BSD	EPA-6020	100	1		09/09/2014	RAL

ALS Test Batch ID: 86114 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-6020	101			09/17/2014	RAL
Arsenic - BSD	EPA-6020	104	3		09/17/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Barium - BS	EPA-6020	105			09/17/2014	RAL
Barium - BSD	EPA-6020	109	4		09/17/2014	RAL
Cadmium - BS	EPA-6020	102			09/17/2014	RAL
Cadmium - BSD	EPA-6020	106	3		09/17/2014	RAL
Chromium - BS	EPA-6020	102			09/17/2014	RAL
Chromium - BSD	EPA-6020	106	4		09/17/2014	RAL
Iron - BS	EPA-6020	107			09/17/2014	RAL
Iron - BSD	EPA-6020	110	3		09/17/2014	RAL
Lead - BS	EPA-6020	104			09/17/2014	RAL
Lead - BSD	EPA-6020	108	3		09/17/2014	RAL
Manganese - BS	EPA-6020	102			09/17/2014	RAL
Manganese - BSD	EPA-6020	106	3		09/17/2014	RAL
Selenium - BS	EPA-6020	99.9			09/17/2014	RAL
Selenium - BSD	EPA-6020	103	3		09/17/2014	RAL
Silver - BS	EPA-6020	111			09/17/2014	RAL
Silver - BSD	EPA-6020	114	3		09/17/2014	RAL
Sodium - BS	EPA-6020	103			09/17/2014	RAL
Sodium - BSD	EPA-6020	108	4		09/17/2014	RAL

APPROVED BY

Laboratory Director



Seattle/Edmonds (425) 778-0907
 Tacoma (253) 926-2493
 Spokane (509) 327-9737
 Portland (503) 542-1080

EV14092040

Chain-of-Custody Record

Date 9/5/14
 Page 1 of 1

Project Name Yelina Landfill Project No. 1198008.010.014

Project Location/Event Yelina WA

Sampler's Name Steve Shaw

Project Contact Jeffrey Elber

Send Results To Jeffrey Elber's Steve Shaw's Address

Sample I.D. _____ Date _____ Time _____ Matrix _____ No. of Containers _____

Testing Parameters

Turnaround Time
 Standard
 Accelerated

Observations/Comments

Sample I.D.	Date	Time	Matrix	No. of Containers	TPH-HEAD	MMPH-DX / Dx cleanup	NMPPH-G	Metals* (6020/7471)	Hex Chrome (7196)	Chlorinated Pesticides (LL 8081)	PCBs (LL 8082)	VOCs (8260 c)	SVOCs (8270 d)	PAHs (8270d-SIM)	Fluoride + Nitrate (800 800)	pH (9045)
1 MW-108(2.5-3.5)-090414	9/4/14	0815	soil	4	X	X	X	X	X	X	X	X	X	X	X	X
2 MW-108(2.5-2.5)-090414	9/5/14	1000		5	X	X	X	X	X	X	X	X	X	X	X	X
3 MW-103(20.5-21.5)-090514	9/5/14	0930		5	X	X	X	X	X	X	X	X	X	X	X	X
4 MW-101(17.5-18.5)-090514	9/5/14	1400		5	X	X	X	X	X	X	X	X	X	X	X	X

Allow water samples to settle, collect aliquot from clear portion 803 9/5/14

X NMPPH-DX - run acid wash/silica gel cleanup run samples standardized to product

AND

X NMPPH-DX without silica gel cleanup

Special Shipment/Handling or Storage Requirements 1 cool & ice

Method of Shipment FedEx delivery

Relinquished by
 Signature _____
 Printed Name _____
 Company _____

Received by
 Signature _____
 Printed Name _____
 Company _____

Relinquished by
 Signature [Signature]
 Printed Name STEVEN P SHAW
 Company Landau Associates

Received by
 Signature [Signature]
 Printed Name KICK BROWN
 Company ALS

Relinquished by
 Signature _____
 Printed Name _____
 Company _____

Received by
 Signature _____
 Printed Name _____
 Company _____

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates

ALS Job #: EV14090040

Project: Yakima Landfill

Received Date: 9/6/14 Received Time: 10:30 By: RB

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express 1st Overnight.

Were custody seals on outside of sample?

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If yes, how many? 1 Where? Top
Custody seal date: 9-5-14 Seal name: Landau

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Did all bottles have labels?

	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Did all bottle labels and tags agree with Chain of Custody?

	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Were samples received within hold time?

	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Did all bottles arrive in good condition (unbroken, etc.)?

	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Was sufficient amount of sample sent for the tests indicated?

	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Was correct preservation added to samples?

	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

If no, Sample Control added preservative to the following: Per 5035 low kits.

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------

Bubbles present in sample #: _____

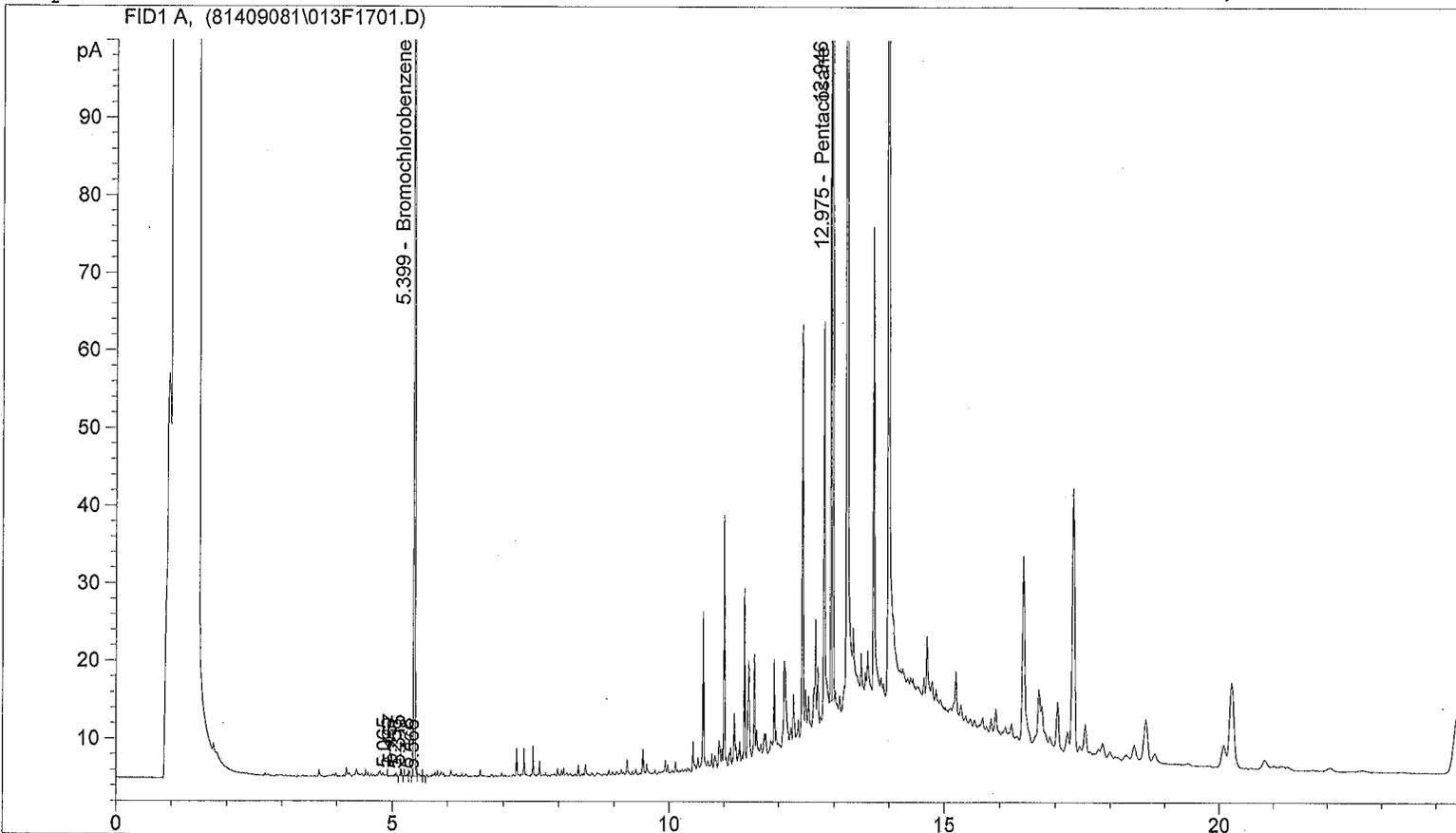
Temperature of cooler upon receipt: 5.3 °C on Ice Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

Sample Name: EV14090040-01 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	396.110	41.767
12.975		Pentacosane	200.767	9.643

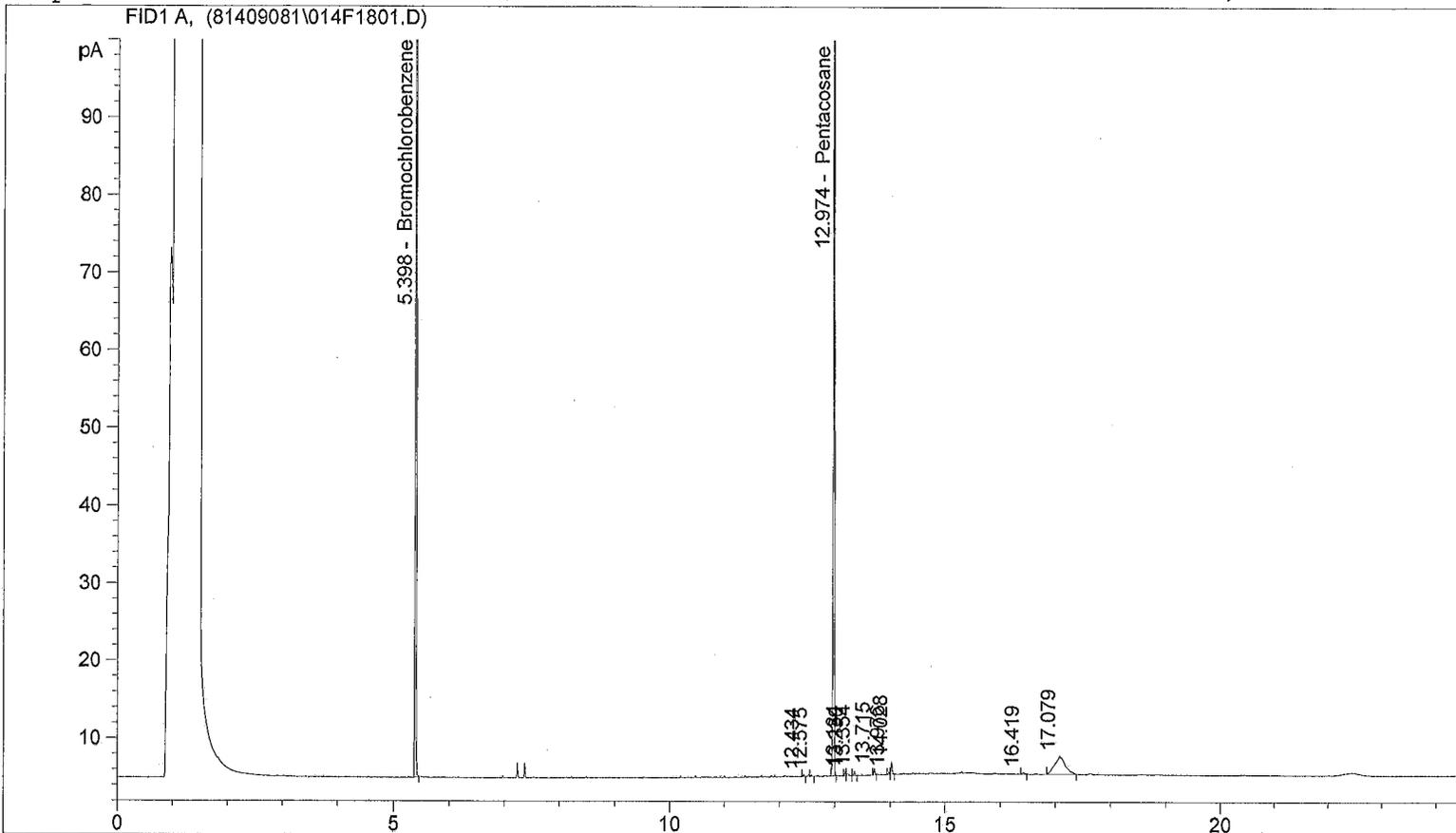
84%
96%

G < 20 mg/kg
 D < 50 mg/kg
 O > 100 mg/kg Lube Oil or similar product

REVIEWED BY *AB*
 & DATE 9/23/14

09.08.14

Sample Name: EV14090040-02 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.398	FID1 A,	Bromochlorobenzene	382.001	40.279
12.974		Pentacosane	183.577	8.818

81%
88%

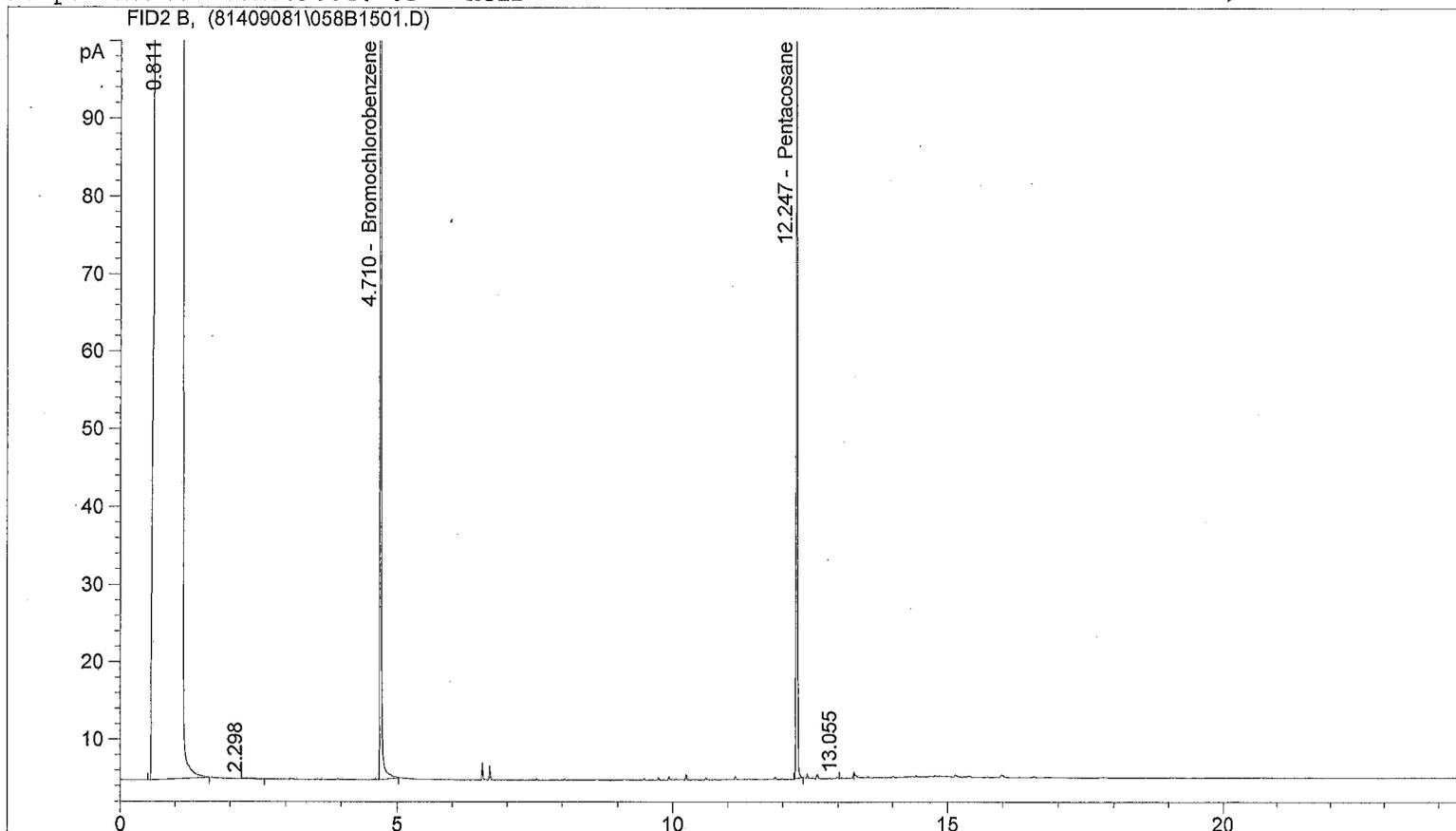
G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

REVIEWED BY *MS*
 & DATE *9/23/14*

09.08.14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409081\058B1501.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDS.M
 Injection Date & Time: 9/8/2014 3:44:16 PM 9/8/2014 3:44:16 PM
 Report Creation: 9/8/2014 4:23:48 PM

Sample Name: EV14090040-03 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.710	FID2 B,	Bromochlorobenzene	423.257	39.138
12.247		Pentacosane	197.127	7.809

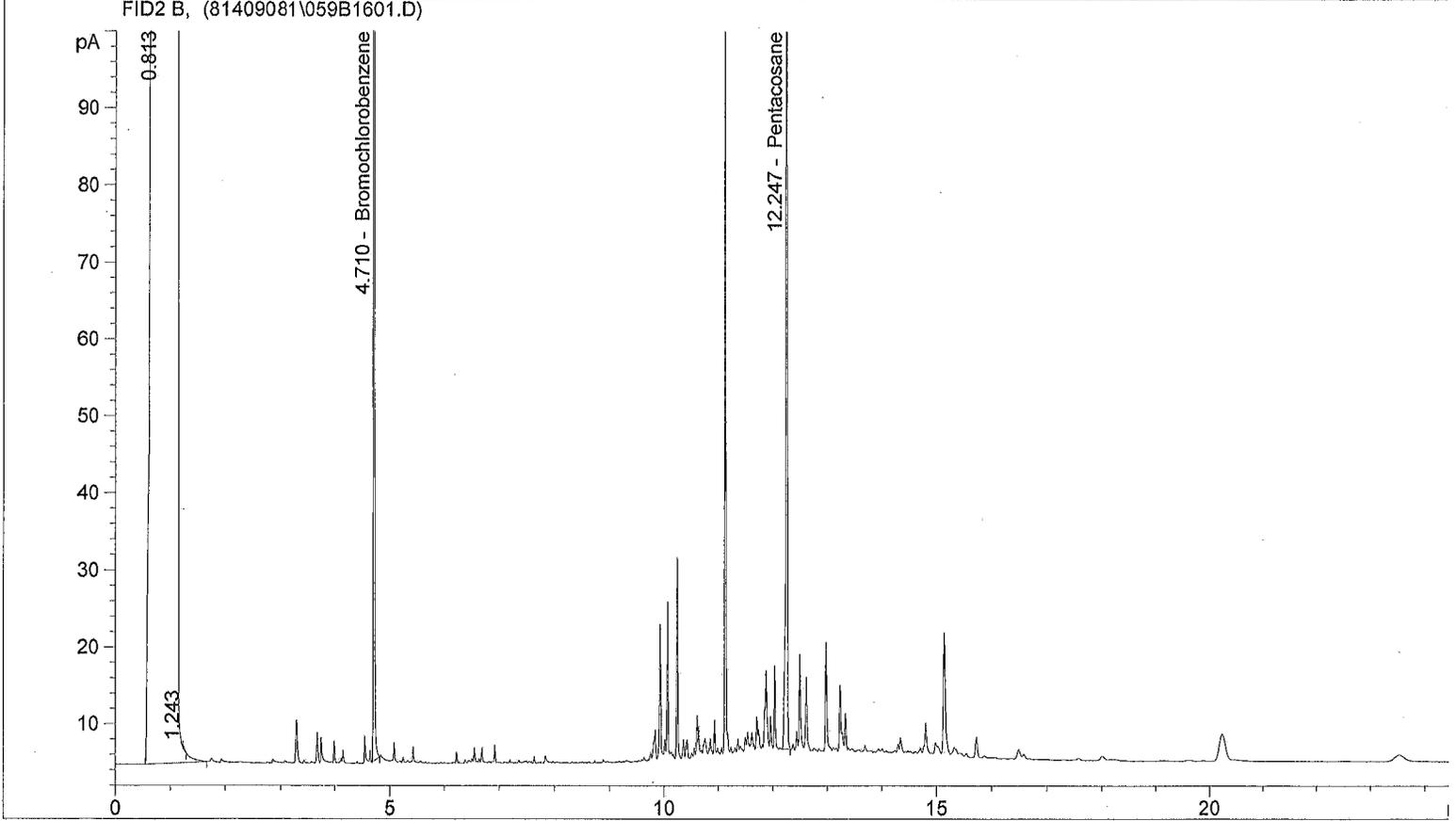
78%
78%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

REVIEWED BY *MS*
 & DATE *9/23/14*

09.08.14

Sample Name: EV14090040-04 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.710	FID2 B,	Bromochlorobenzene	411.550	38.056
12.247		Pentacosane	228.376	9.047

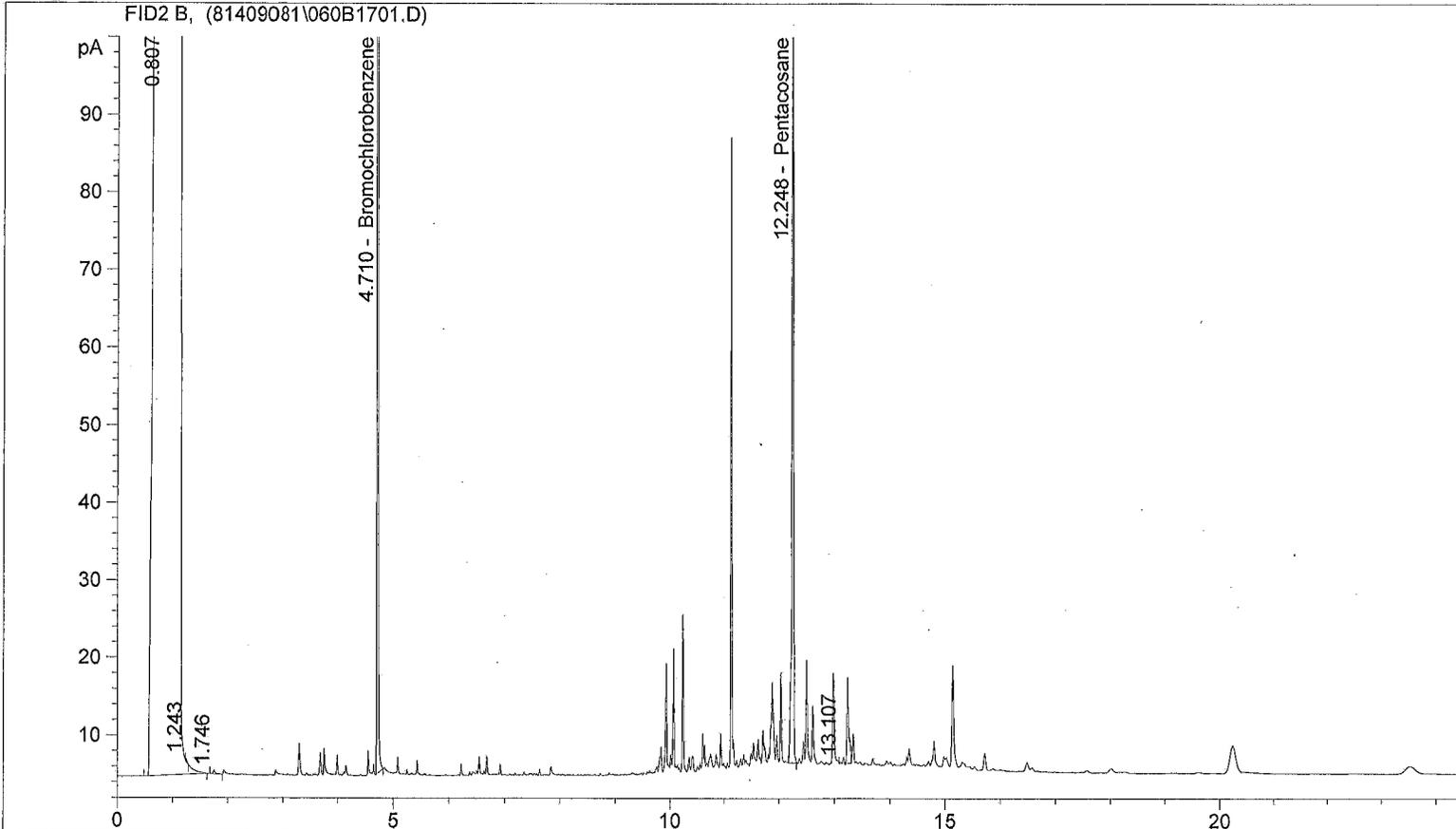
76%
90%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

REVIEWED BY *RS*
 & DATE *9/8/14*

09.08.14

Sample Name: EV14090040-04DUPHCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.710	FID2 B,	Bromochlorobenzene	418.024	38.654
12.248		Pentacosane	231.704	9.178

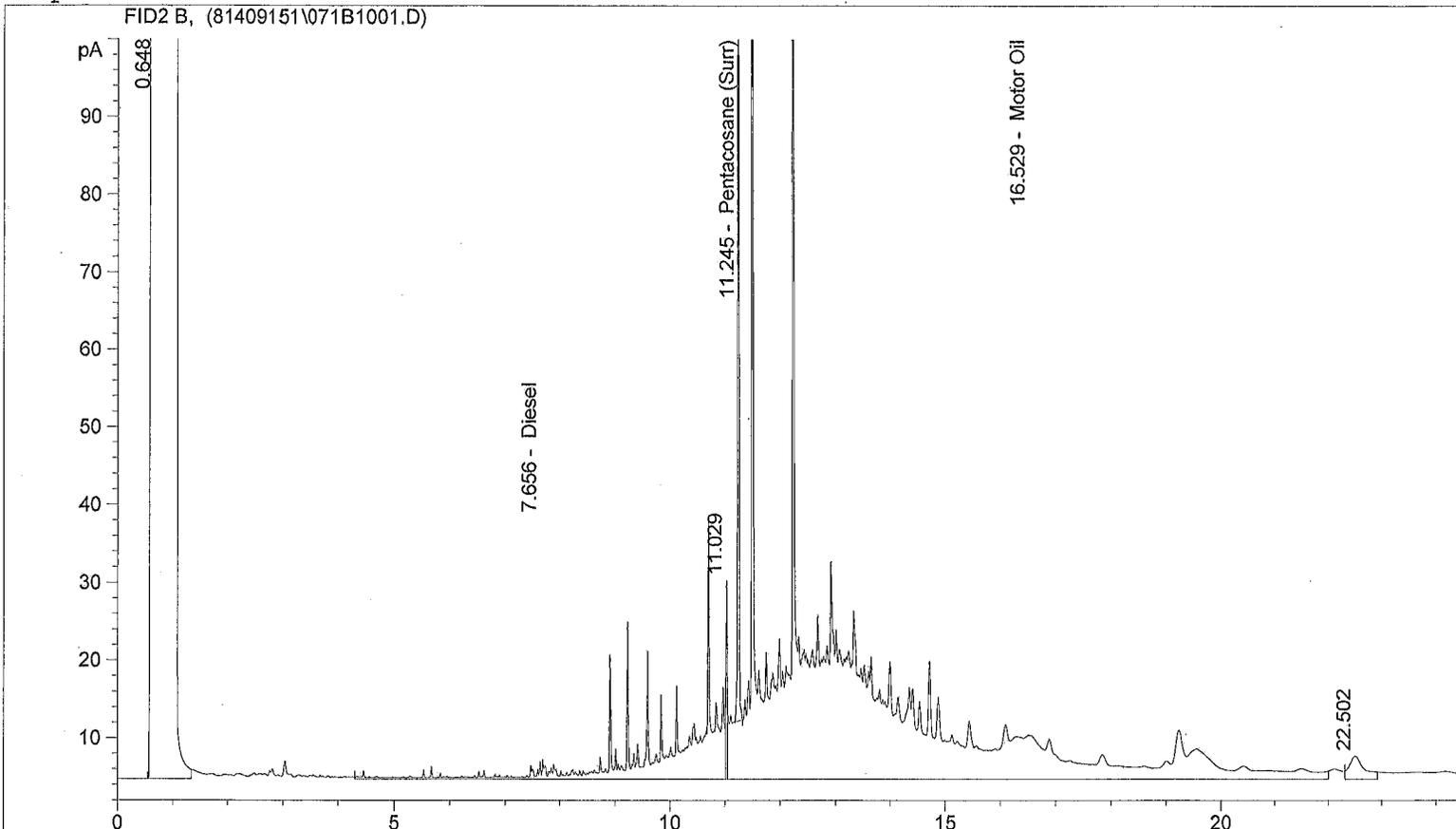
77%
92%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

REVIEWED BY ¹²⁴
 & DATE 9/23/14

09.08.14

Sample Name: EV14090040-01 SGA
 FID2 B, (81409151\071B1001.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	721.427	49.531
11.245		Pentacosane (Surr)	196.172	6.931
16.529		Motor Oil	4248.843	336.019

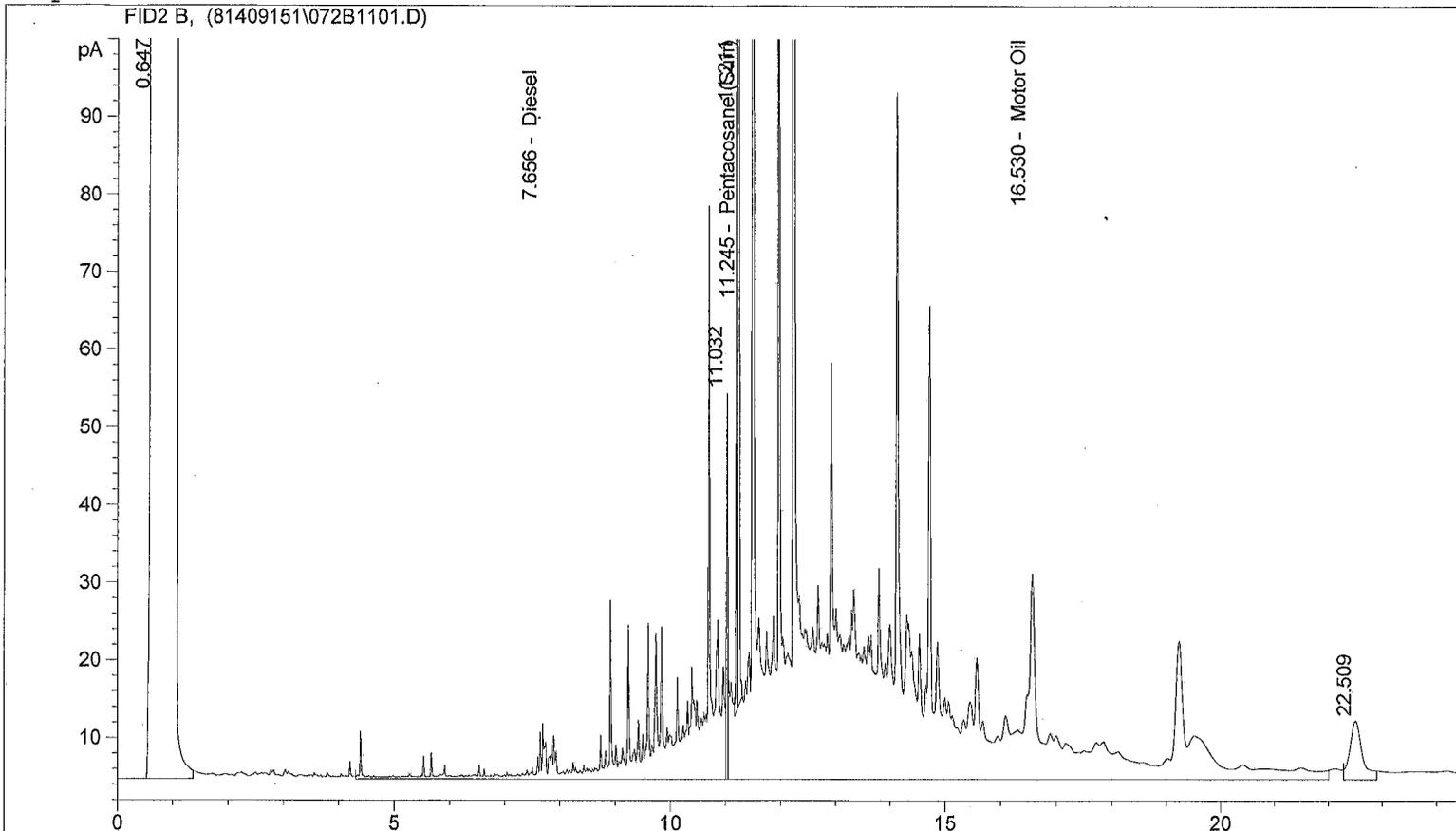
69%
 25.62g

$D < 25 \text{ mg/kg}$
 $D = 336.019 \text{ ug/mL} \times \frac{10 \text{ mL}}{25.62 \text{ g}} = 130 \text{ mg/kg Lake Oil}$
 or similar products

REVIEWED BY *15*
 & DATE *9/23/14*

09.17.14-ES

Sample Name: EV14090040-01
 FID2 B, (81409151\072B1101.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	1201.193	82.471
11.245		Pentacosane (Surr)	194.967	6.888
16.530		Motor Oil	5060.125	400.179

691.
 25.62g

$D < 25 \text{ mg/kg}$

$D = 400.179 \text{ ug/mL} \times \frac{10 \text{ mL}}{25.62 \text{ g}} = 160 \text{ mg/kg Lube Oil}$
 or similar product

REVIEWED BY AB
 & DATE 9/30/14

09.17.14es



August 10, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On September 6th, 4 samples were received by our laboratory and assigned our laboratory project number EV14090040. The project was identified as your Yakima Landfill / #1148008.010.014. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report is being re-issued with lowered reporting limits for Chloroform. No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	8/10/2015
		ALS JOB#:	EV14090040
		ALS SAMPLE#:	EV14090040-02
CLIENT CONTACT:	Jeffrey Fellows	DATE RECEIVED:	09/06/2014
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	COLLECTION DATE:	9/4/2014 10:00:00 AM
CLIENT SAMPLE ID	MW-108 (21.5-22.5)-090414	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	09/10/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS JOB#: EV14090040
Edmonds, WA 98020 ALS SAMPLE#: EV14090040-03
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/06/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/5/2014 9:30:00 AM
CLIENT SAMPLE ID MW-103 (20.5-21.5)-090514 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	09/10/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	8/10/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090040
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090040-04
CLIENT SAMPLE ID	MW-101 (17.5-18.5)-090514	DATE RECEIVED:	09/06/2014
		COLLECTION DATE:	9/5/2014 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	09/10/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS SDG#: EV14090040
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091014S - Batch 85939 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	QUAL	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U		UG/KG	8.0	09/10/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS SDG#: EV14090040
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 85939 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	92.6			09/10/2014	DLC
1,1-Dichloroethene - BSD	EPA-8260	89.3	4		09/10/2014	DLC
Benzene - BS	EPA-8260	90.9			09/10/2014	DLC
Benzene - BSD	EPA-8260	87.0	4		09/10/2014	DLC
Toluene - BS	EPA-8260	96.2			09/10/2014	DLC
Toluene - BSD	EPA-8260	91.2	5		09/10/2014	DLC
Chlorobenzene - BS	EPA-8260	97.7			09/10/2014	DLC
Chlorobenzene - BSD	EPA-8260	95.9	2		09/10/2014	DLC

APPROVED BY

Laboratory Director



October 8, 2014

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On September 10th, 5 samples were received by our laboratory and assigned our laboratory project number EV14090051. The project was identified as your Yakima Landfill / #1148008.010.014. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-01
CLIENT SAMPLE ID	MW-102 (4-5)-090814	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/8/2014 10:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/15/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/15/2014	EBS
HCID-Oil Range	NWTPH-HCID	>100	100	1	MG/KG	09/15/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	09/17/2014	EBS
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	09/18/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	260	50	1	MG/KG	09/17/2014	EBS
TPH-Oil Range	NWTPH-DX	330	50	1	MG/KG	09/18/2014	EBS
Naphthalene	EPA-8270 SIM	36	20	1	ug/Kg	09/17/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	26	20	1	ug/Kg	09/17/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	54	1	ug/Kg	09/17/2014	GAP
Phenanthrene	EPA-8270 SIM	23	20	1	ug/Kg	09/17/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoranthene	EPA-8270 SIM	31	20	1	ug/Kg	09/17/2014	GAP
Pyrene	EPA-8270 SIM	33	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/18/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/18/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/18/2014	GAP
Mercury	EPA-7471	0.060	0.020	1	MG/KG	09/17/2014	RAL
Arsenic	EPA-6020	1.9	1.0	5	MG/KG	09/18/2014	RAL
Barium	EPA-6020	82	0.50	5	MG/KG	09/18/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/18/2014	RAL
Chromium	EPA-6020	7.9	0.50	5	MG/KG	09/18/2014	RAL
Iron	EPA-6020	17000	50	5	MG/KG	09/18/2014	RAL
Lead	EPA-6020	39	0.50	5	MG/KG	09/18/2014	RAL
Manganese	EPA-6020	200	0.50	5	MG/KG	09/18/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/18/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-01
CLIENT SAMPLE ID	MW-102 (4-5)-090814	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/8/2014 10:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver	EPA-6020	U	0.50	5	MG/KG	09/18/2014	RAL
Sodium	EPA-6020	340	50	5	MG/KG	09/18/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	78.2	09/15/2014	EBS
C25	NWTPH-HCID	92.9	09/15/2014	EBS
C25	NWTPH-DX w/ SGA	105	09/17/2014	EBS
C25	NWTPH-DX	96.7	09/18/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	104	09/17/2014	GAP
Terphenyl-d14	EPA-8270 SIM	74.5	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-02
CLIENT SAMPLE ID	MW-102 (15-15.5)-090814	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/8/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	25	1	MG/KG	09/15/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	61	1	MG/KG	09/15/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	120	1	MG/KG	09/15/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Vinyl Chloride	EPA-8260	U	0.037	1	ug/Kg	09/11/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/11/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/11/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/11/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/11/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/11/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Bromodichloromethane	EPA-8260	U	0.91	1	ug/Kg	09/11/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/11/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.96	1	ug/Kg	09/11/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/11/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-02
CLIENT SAMPLE ID	MW-102 (15-15.5)-090814	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/8/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/11/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/11/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	1.0	1	ug/Kg	09/11/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	1.0	1	ug/Kg	09/11/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/11/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	61	1	ug/Kg	09/17/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-02
CLIENT SAMPLE ID	MW-102 (15-15.5)-090814	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/8/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	09/19/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	29	1	ug/Kg	09/19/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Aniline	EPA-8270	U	51	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	110	1	ug/Kg	09/19/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	270	1	ug/Kg	09/19/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-02
CLIENT SAMPLE ID	MW-102 (15-15.5)-090814	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/8/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	43	1	ug/Kg	09/19/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	41	1	ug/Kg	09/19/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	24	1	ug/Kg	09/19/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	190	1	ug/Kg	09/19/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	110	100	1	ug/Kg	09/19/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-02
CLIENT SAMPLE ID	MW-102 (15-15.5)-090814	DATE RECEIVED:	09/10/2014
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
PCB-1016	EPA-8082	U	0.0061	1	MG/KG	10/02/2014	CAS
PCB-1221	EPA-8082	U	0.013	1	MG/KG	10/02/2014	CAS
PCB-1232	EPA-8082	U	0.0061	1	MG/KG	10/02/2014	CAS
PCB-1242	EPA-8082	U	0.0061	1	MG/KG	10/02/2014	CAS
PCB-1248	EPA-8082	U	0.0061	1	MG/KG	10/02/2014	CAS
PCB-1254	EPA-8082	U	0.0061	1	MG/KG	10/02/2014	CAS
PCB-1260	EPA-8082	U	0.0061	1	MG/KG	10/02/2014	CAS
A-BHC	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
G-BHC	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
B-BHC	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Heptachlor	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
D-BHC	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Aldrin	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Chlordane	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Endosulfan I	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
4,4'-DDE	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Dieldrin	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Endrin	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
4,4'-DDD	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Endosulfan II	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
4,4'-DDT	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Methoxychlor	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Toxaphene	EPA-8081	U	0.16	1	MG/KG	09/25/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/20/2014	RAL
pH	EPA-9045	7.43	± 0.01	1	S.U.	09/10/2014	SMR
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/18/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/18/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/18/2014	GAP
Mercury	EPA-7471	0.049	0.020	1	MG/KG	09/17/2014	RAL
Arsenic	EPA-6020	2.2	1.0	5	MG/KG	09/11/2014	RAL
Barium	EPA-6020	84	0.50	5	MG/KG	09/11/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/11/2014	RAL
Chromium	EPA-6020	15	0.50	5	MG/KG	09/11/2014	RAL
Iron	EPA-6020	24000	50	5	MG/KG	09/11/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-02
CLIENT SAMPLE ID	MW-102 (15-15.5)-090814	DATE RECEIVED:	09/10/2014
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		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	6.0	0.50	5	MG/KG	09/11/2014	RAL
Manganese	EPA-6020	250	0.50	5	MG/KG	09/11/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/11/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	09/11/2014	RAL
Sodium	EPA-6020	440	50	5	MG/KG	09/11/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	76.7	09/15/2014	EBS
C25	NWTPH-HCID	85.0	09/15/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	109	09/11/2014	DLC
Toluene-d8	EPA-8260	97.0	09/11/2014	DLC
4-Bromofluorobenzene	EPA-8260	103	09/11/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	70.3	09/17/2014	GAP
Terphenyl-d14	EPA-8270 SIM	126	09/17/2014	GAP
2-Fluorophenol	EPA-8270	105	09/19/2014	GAP
Phenol-d5	EPA-8270	79.3	09/19/2014	GAP
Nitrobenzene-d5	EPA-8270	66.5	09/19/2014	GAP
2-Fluorobiphenyl	EPA-8270	78.0	09/19/2014	GAP
2,4,6-Tribromophenol	EPA-8270	83.3	09/19/2014	GAP
Terphenyl-d14	EPA-8270	85.4	09/19/2014	GAP
DCB	EPA-8082	68.0	10/02/2014	CAS
TCMX	EPA-8081	76.0	09/25/2014	CAS
DCB	EPA-8081	80.0	09/25/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-03
CLIENT SAMPLE ID	MW-107 (2.5-3.5)-090914	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/9/2014 8:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/15/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/15/2014	EBS
HCID-Oil Range	NWTPH-HCID	>100	100	1	MG/KG	09/15/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	250	25	1	MG/KG	09/17/2014	EBS
TPH-Diesel Range	NWTPH-DX	300	120	5	MG/KG	09/17/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	820	50	1	MG/KG	09/17/2014	EBS
TPH-Oil Range	NWTPH-DX	990	250	5	MG/KG	09/17/2014	EBS
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	57	1	ug/Kg	09/17/2014	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoride	EPA-300.0M	2.0	1.6	1	MG/KG	09/18/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/18/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/18/2014	GAP
Mercury	EPA-7471	0.038	0.020	1	MG/KG	09/17/2014	RAL
Arsenic	EPA-6020	1.7	1.0	5	MG/KG	09/18/2014	RAL
Barium	EPA-6020	88	0.50	5	MG/KG	09/18/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/18/2014	RAL
Chromium	EPA-6020	8.9	0.50	5	MG/KG	09/18/2014	RAL
Iron	EPA-6020	27000	50	5	MG/KG	09/18/2014	RAL
Lead	EPA-6020	68	0.50	5	MG/KG	09/18/2014	RAL
Manganese	EPA-6020	470	0.50	5	MG/KG	09/18/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/18/2014	RAL

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-03
CLIENT SAMPLE ID	MW-107 (2.5-3.5)-090914	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/9/2014 8:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver	EPA-6020	U	0.50	5	MG/KG	09/18/2014	RAL
Sodium	EPA-6020	520	50	5	MG/KG	09/18/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	94.1	09/15/2014	EBS
C25	NWTPH-HCID	73.4	09/15/2014	EBS
C25	NWTPH-DX w/ SGA	118	09/17/2014	EBS
C25 5X Dilution	NWTPH-DX	120	09/17/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	98.7	09/17/2014	GAP
Terphenyl-d14	EPA-8270 SIM	68.4	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-04
CLIENT SAMPLE ID	MW-107 (16-17)-090914	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/9/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/15/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/15/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/15/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Vinyl Chloride	EPA-8260	U	0.051	1	ug/Kg	09/11/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/11/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/11/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/11/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/11/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/11/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Bromodichloromethane	EPA-8260	U	1.2	1	ug/Kg	09/11/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/11/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	1.3	1	ug/Kg	09/11/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/11/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-04
CLIENT SAMPLE ID	MW-107 (16-17)-090914	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/9/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/11/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/11/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	1.4	1	ug/Kg	09/11/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	1.4	1	ug/Kg	09/11/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/11/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/11/2014	DLC
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	76	1	ug/Kg	09/17/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-04
CLIENT SAMPLE ID	MW-107 (16-17)-090914	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/9/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	09/19/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	35	1	ug/Kg	09/19/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Aniline	EPA-8270	U	61	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	130	1	ug/Kg	09/19/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	120	1	ug/Kg	09/19/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	320	1	ug/Kg	09/19/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-04
CLIENT SAMPLE ID	MW-107 (16-17)-090914	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/9/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	52	1	ug/Kg	09/19/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	49	1	ug/Kg	09/19/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	28	1	ug/Kg	09/19/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	230	1	ug/Kg	09/19/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	540	100	1	ug/Kg	09/19/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-04
CLIENT SAMPLE ID	MW-107 (16-17)-090914	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/9/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
PCB-1016	EPA-8082	U	0.0074	1	MG/KG	10/02/2014	CAS
PCB-1221	EPA-8082	U	0.015	1	MG/KG	10/02/2014	CAS
PCB-1232	EPA-8082	U	0.0074	1	MG/KG	10/02/2014	CAS
PCB-1242	EPA-8082	U	0.0074	1	MG/KG	10/02/2014	CAS
PCB-1248	EPA-8082	U	0.0074	1	MG/KG	10/02/2014	CAS
PCB-1254	EPA-8082	U	0.0074	1	MG/KG	10/02/2014	CAS
PCB-1260	EPA-8082	U	0.0074	1	MG/KG	10/02/2014	CAS
A-BHC	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
G-BHC	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
B-BHC	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
Heptachlor	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
D-BHC	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
Aldrin	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
Chlordane	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
Endosulfan I	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
4,4'-DDE	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
Dieldrin	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
Endrin	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
4,4'-DDD	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
Endosulfan II	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
4,4'-DDT	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
Methoxychlor	EPA-8081	U	0.0036	1	MG/KG	09/25/2014	CAS
Toxaphene	EPA-8081	U	0.18	1	MG/KG	09/25/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/20/2014	RAL
pH	EPA-9045	7.23	± 0.01	1	S.U.	09/10/2014	SMR
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/18/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/18/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/18/2014	GAP
Mercury	EPA-7471	0.073	0.020	1	MG/KG	09/17/2014	RAL
Arsenic	EPA-6020	2.6	1.1	5	MG/KG	09/11/2014	RAL
Barium	EPA-6020	190	0.50	5	MG/KG	09/11/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/11/2014	RAL
Chromium	EPA-6020	21	0.55	5	MG/KG	09/11/2014	RAL
Iron	EPA-6020	40000	50	5	MG/KG	09/11/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-04
CLIENT SAMPLE ID	MW-107 (16-17)-090914	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/9/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	9.6	0.50	5	MG/KG	09/11/2014	RAL
Manganese	EPA-6020	320	0.50	5	MG/KG	09/11/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/11/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	09/11/2014	RAL
Sodium	EPA-6020	1200	50	5	MG/KG	09/11/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	68.6	09/15/2014	EBS
C25	NWTPH-HCID	73.0	09/15/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	111	09/11/2014	DLC
Toluene-d8	EPA-8260	97.7	09/11/2014	DLC
4-Bromofluorobenzene	EPA-8260	105	09/11/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	72.6	09/17/2014	GAP
Terphenyl-d14	EPA-8270 SIM	56.0	09/17/2014	GAP
2-Fluorophenol	EPA-8270	111	09/19/2014	GAP
Phenol-d5	EPA-8270	85.3	09/19/2014	GAP
Nitrobenzene-d5	EPA-8270	70.9	09/19/2014	GAP
2-Fluorobiphenyl	EPA-8270	82.7	09/19/2014	GAP
2,4,6-Tribromophenol	EPA-8270	87.6	09/19/2014	GAP
Terphenyl-d14	EPA-8270	87.6	09/19/2014	GAP
DCB	EPA-8082	68.0	10/02/2014	CAS
TCMX	EPA-8081	74.0	09/25/2014	CAS
DCB	EPA-8081	78.0	09/25/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-05
CLIENT SAMPLE ID	MW-106 (2.5-3.5)-090914	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/9/2014 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	>20	20	1	MG/KG	09/15/2014	EBS
HCID-Diesel Range	NWTPH-HCID	>50	50	1	MG/KG	09/15/2014	EBS
HCID-Oil Range	NWTPH-HCID	>100	100	1	MG/KG	09/15/2014	EBS
TPH-Volatile Range	NWTPH-GX	35	3.0	1	MG/KG	09/17/2014	DLC
TPH-Diesel Range	NWTPH-DX w/ SGA	87	25	1	MG/KG	09/18/2014	EBS
TPH-Diesel Range	NWTPH-DX	150	25	1	MG/KG	09/19/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	380	50	1	MG/KG	09/18/2014	EBS
TPH-Oil Range	NWTPH-DX	560	50	1	MG/KG	09/19/2014	EBS
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	53	1	ug/Kg	09/17/2014	GAP
Phenanthrene	EPA-8270 SIM	21	20	1	ug/Kg	09/17/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	21	20	1	ug/Kg	09/17/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoride	EPA-300.0M	3.3	1.6	1	MG/KG	09/18/2014	GAP
Nitrate as N	EPA-300.0M	15	0.50	1	MG/KG	09/18/2014	GAP
Nitrite as N	EPA-300.0M	1.7	0.50	1	MG/KG	09/18/2014	GAP
Mercury	EPA-7471	0.11	0.020	1	MG/KG	09/17/2014	RAL
Arsenic	EPA-6020	2.6	1.0	5	MG/KG	09/18/2014	RAL
Barium	EPA-6020	100	0.50	5	MG/KG	09/18/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/18/2014	RAL
Chromium	EPA-6020	13	0.50	5	MG/KG	09/18/2014	RAL
Iron	EPA-6020	25000	50	5	MG/KG	09/18/2014	RAL
Lead	EPA-6020	51	0.50	5	MG/KG	09/18/2014	RAL
Manganese	EPA-6020	520	0.50	5	MG/KG	09/18/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090051-05
CLIENT SAMPLE ID	MW-106 (2.5-3.5)-090914	DATE RECEIVED:	09/10/2014
		COLLECTION DATE:	9/9/2014 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Selenium	EPA-6020	U	5.0	5	MG/KG	09/18/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	09/18/2014	RAL
Sodium	EPA-6020	560	50	5	MG/KG	09/18/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	73.9	09/15/2014	EBS
C25	NWTPH-HCID	64.6	09/15/2014	EBS
TFT	NWTPH-GX	121	09/17/2014	DLC
C25	NWTPH-DX w/ SGA	97.2	09/18/2014	EBS
C25	NWTPH-DX	98.6	09/19/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	89.5	09/17/2014	GAP
Terphenyl-d14	EPA-8270 SIM	55.3	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified gasoline range product, weathered diesel and lube oil.
 Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090051
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-090814S - Batch 85850 - Soil by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/08/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/08/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/08/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MBG-091514S - Batch 86117 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	09/15/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091714S - Batch 86139 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	09/17/2014	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	09/17/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091014S - Batch 85939 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Vinyl Chloride	EPA-8260	U	0.029	1	ug/Kg	09/10/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-091014S - Batch 85939 - Soil by EPA-8260

2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromodichloromethane	EPA-8260	U	0.69	1	ug/Kg	09/10/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.74	1	ug/Kg	09/10/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/10/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/10/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.76	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.80	1	ug/Kg	09/10/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090051
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091014S - Batch 85939 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,3-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2-Dibromo-3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/10/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/10/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091114S - Batch 86097 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	77	1	ug/Kg	09/18/2014	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091814S - Batch 86185 - Soil by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	200	1	ug/Kg	09/19/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	33	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-091814S - Batch 86185 - Soil by EPA-8270

Phenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Aniline	EPA-8270	U	58	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	120	1	ug/Kg	09/19/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	120	1	ug/Kg	09/19/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	310	1	ug/Kg	09/19/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	49	1	ug/Kg	09/19/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	46	1	ug/Kg	09/19/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090051
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091814S - Batch 86185 - Soil by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4-Dinitrotoluene	EPA-8270	U	27	1	ug/Kg	09/19/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	210	1	ug/Kg	09/19/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-10/02/2014 - Batch R242464 - Soil by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0061	1	MG/KG	10/02/2014	CAS
PCB-1221	EPA-8082	U	0.013	1	MG/KG	10/02/2014	CAS
PCB-1232	EPA-8082	U	0.0061	1	MG/KG	10/02/2014	CAS
PCB-1242	EPA-8082	U	0.0061	1	MG/KG	10/02/2014	CAS
PCB-1248	EPA-8082	U	0.0061	1	MG/KG	10/02/2014	CAS
PCB-1254	EPA-8082	U	0.0061	1	MG/KG	10/02/2014	CAS
PCB-1260	EPA-8082	U	0.0061	1	MG/KG	10/02/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090051
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB1-09/25/2014 - Batch R242461 - Soil by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
G-BHC	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
B-BHC	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Heptachlor	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
D-BHC	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Aldrin	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Chlordane	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Endosulfan I	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
4,4'-DDE	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Dieldrin	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Endrin	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
4,4'-DDD	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Endosulfan II	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
4,4'-DDT	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Methoxychlor	EPA-8081	U	0.0031	1	MG/KG	09/25/2014	CAS
Toxaphene	EPA-8081	U	0.16	1	MG/KG	09/25/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9202014 - Batch R241227 - Soil by EPA-7196

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/20/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9172014 - Batch R241241 - Soil by EPA-300.0M

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/17/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090051
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MBLK-9172014 - Batch R241013 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	0.020	1	MG/KG	09/17/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091014S - Batch 85920 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	0.20	1	MG/KG	09/10/2014	RAL
Barium	EPA-6020	U	0.10	1	MG/KG	09/10/2014	RAL
Cadmium	EPA-6020	U	0.10	1	MG/KG	09/10/2014	RAL
Chromium	EPA-6020	U	0.10	1	MG/KG	09/10/2014	RAL
Iron	EPA-6020	U	10	1	MG/KG	09/10/2014	RAL
Lead	EPA-6020	U	0.10	1	MG/KG	09/10/2014	RAL
Manganese	EPA-6020	U	0.10	1	MG/KG	09/10/2014	RAL
Selenium	EPA-6020	U	1.0	1	MG/KG	09/10/2014	RAL
Silver	EPA-6020	U	0.10	1	MG/KG	09/10/2014	RAL
Sodium	EPA-6020	U	10	1	MG/KG	09/10/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091614S - Batch 86114 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	0.20	1	MG/KG	09/17/2014	RAL
Barium	EPA-6020	U	0.10	1	MG/KG	09/17/2014	RAL
Cadmium	EPA-6020	U	0.10	1	MG/KG	09/17/2014	RAL
Chromium	EPA-6020	U	0.10	1	MG/KG	09/17/2014	RAL
Iron	EPA-6020	U	10	1	MG/KG	09/17/2014	RAL
Lead	EPA-6020	U	0.10	1	MG/KG	09/17/2014	RAL
Manganese	EPA-6020	U	0.10	1	MG/KG	09/17/2014	RAL
Selenium	EPA-6020	U	1.0	1	MG/KG	09/17/2014	RAL
Silver	EPA-6020	U	0.10	1	MG/KG	09/17/2014	RAL
Sodium	EPA-6020	U	10	1	MG/KG	09/17/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 86117 - Soil by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	90.9			09/15/2014	DLC
TPH-Volatile Range - BSD	NWTPH-GX	90.4	1		09/15/2014	DLC

ALS Test Batch ID: 86139 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	106			09/17/2014	EBS
TPH-Diesel Range - BSD	NWTPH-DX	96.7	9		09/17/2014	EBS

ALS Test Batch ID: 85939 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	92.6			09/10/2014	DLC
1,1-Dichloroethene - BSD	EPA-8260	89.3	4		09/10/2014	DLC
Benzene - BS	EPA-8260	90.9			09/10/2014	DLC
Benzene - BSD	EPA-8260	87.0	4		09/10/2014	DLC
Trichloroethene - BS	EPA-8260	94.4			09/10/2014	DLC
Trichloroethene - BSD	EPA-8260	90.1	5		09/10/2014	DLC
Toluene - BS	EPA-8260	96.2			09/10/2014	DLC
Toluene - BSD	EPA-8260	91.2	5		09/10/2014	DLC
Chlorobenzene - BS	EPA-8260	97.7			09/10/2014	DLC
Chlorobenzene - BSD	EPA-8260	95.9	2		09/10/2014	DLC

ALS Test Batch ID: 86097 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	EPA-8270 SIM	74.3			09/18/2014	GAP
Naphthalene - BSD	EPA-8270 SIM	84.4	13		09/18/2014	GAP
Acenaphthene - BS	EPA-8270 SIM	90.5			09/18/2014	GAP
Acenaphthene - BSD	EPA-8270 SIM	92.8	3		09/18/2014	GAP
Pentachlorophenol - BS	EPA-8270 SIM	89.0			09/18/2014	GAP
Pentachlorophenol - BSD	EPA-8270 SIM	123	32		09/18/2014	GAP
Pyrene - BS	EPA-8270 SIM	92.1			09/18/2014	GAP
Pyrene - BSD	EPA-8270 SIM	106	14		09/18/2014	GAP
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	58.2			09/18/2014	GAP
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	64.7	11		09/18/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090051
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 86185 - Soil by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	64.9			09/19/2014	GAP
Phenol - BSD	EPA-8270	89.4	32		09/19/2014	GAP
2-Chlorophenol - BS	EPA-8270	68.3			09/19/2014	GAP
2-Chlorophenol - BSD	EPA-8270	90.8	28		09/19/2014	GAP
1,4-Dichlorobenzene - BS	EPA-8270	72.0			09/19/2014	GAP
1,4-Dichlorobenzene - BSD	EPA-8270	90.1	22		09/19/2014	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	79.8			09/19/2014	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	103	25		09/19/2014	GAP
1,2,4-Trichlorobenzene - BS	EPA-8270	69.7			09/19/2014	GAP
1,2,4-Trichlorobenzene - BSD	EPA-8270	87.8	23		09/19/2014	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	70.2			09/19/2014	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	92.4	27		09/19/2014	GAP
Acenaphthene - BS	EPA-8270	78.0			09/19/2014	GAP
Acenaphthene - BSD	EPA-8270	98.3	23		09/19/2014	GAP
4-Nitrophenol - BS	EPA-8270	62.5			09/19/2014	GAP
4-Nitrophenol - BSD	EPA-8270	88.8	35		09/19/2014	GAP
2,4-Dinitrotoluene - BS	EPA-8270	64.7			09/19/2014	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	81.7	23		09/19/2014	GAP
Pyrene - BS	EPA-8270	79.5			09/19/2014	GAP
Pyrene - BSD	EPA-8270	101	24		09/19/2014	GAP

ALS Test Batch ID: R242464 - Soil by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	97.5			10/02/2014	CAS
PCB-1260 - BS	EPA-8082	104			10/02/2014	CAS

ALS Test Batch ID: R242461 - Soil by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	82.4			09/25/2014	CAS
G-BHC - BS	EPA-8081	82.3			09/25/2014	CAS
B-BHC - BS	EPA-8081	77.9			09/25/2014	CAS
Heptachlor - BS	EPA-8081	81.7			09/25/2014	CAS
D-BHC - BS	EPA-8081	87.6			09/25/2014	CAS
Aldrin - BS	EPA-8081	77.0			09/25/2014	CAS
Heptachlor Epoxide - BS	EPA-8081	79.6			09/25/2014	CAS
Chlordane - BS	EPA-8081	79.0			09/25/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090051
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Endosulfan I - BS	EPA-8081	61.5			09/25/2014	CAS
4,4'-DDE - BS	EPA-8081	82.4			09/25/2014	CAS
Dieldrin - BS	EPA-8081	82.5			09/25/2014	CAS
Endrin - BS	EPA-8081	86.4			09/25/2014	CAS
4,4'-DDD - BS	EPA-8081	85.6			09/25/2014	CAS
Endosulfan II - BS	EPA-8081	70.6			09/25/2014	CAS
4,4'-DDT - BS	EPA-8081	86.7			09/25/2014	CAS
Endrin Aldehyde - BS	EPA-8081	95.0			09/25/2014	CAS
Endosulfan Sulfate - BS	EPA-8081	90.7			09/25/2014	CAS
Methoxychlor - BS	EPA-8081	89.6			09/25/2014	CAS
Toxaphene - BS	EPA-8081	85.8			09/25/2014	CAS

ALS Test Batch ID: R241227 - Soil by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) - BS	EPA-7196	103			09/20/2014	RAL
Chromium (VI) - BSD	EPA-7196	103	0		09/20/2014	RAL

ALS Test Batch ID: R241241 - Soil by EPA-300.0M

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Fluoride - BS	EPA-300.0M	92.0			09/17/2014	GAP
Fluoride - BSD	EPA-300.0M	91.0	1		09/17/2014	GAP
Nitrate as N - BS	EPA-300.0M	104			09/17/2014	GAP
Nitrate as N - BSD	EPA-300.0M	104	0		09/17/2014	GAP
Nitrite as N - BS	EPA-300.0M	93.5			09/17/2014	GAP
Nitrite as N - BSD	EPA-300.0M	87.0	7		09/17/2014	GAP

ALS Test Batch ID: R241013 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7471	103			09/17/2014	RAL
Mercury - BSD	EPA-7471	103	0		09/17/2014	RAL

ALS Test Batch ID: 85920 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-6020	104			09/10/2014	RAL
Arsenic - BSD	EPA-6020	100	4		09/10/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. **DATE:** 10/8/2014
 130 - 2nd Ave. S. **ALS SDG#:** EV14090051
 Edmonds, WA 98020 **WDOE ACCREDITATION:** C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Barium - BS	EPA-6020	108			09/10/2014	RAL
Barium - BSD	EPA-6020	108	1		09/10/2014	RAL
Cadmium - BS	EPA-6020	106			09/10/2014	RAL
Cadmium - BSD	EPA-6020	106	0		09/10/2014	RAL
Chromium - BS	EPA-6020	100			09/10/2014	RAL
Chromium - BSD	EPA-6020	101	0		09/10/2014	RAL
Iron - BS	EPA-6020	109			09/10/2014	RAL
Iron - BSD	EPA-6020	105	4		09/10/2014	RAL
Lead - BS	EPA-6020	106			09/10/2014	RAL
Lead - BSD	EPA-6020	107	1		09/10/2014	RAL
Manganese - BS	EPA-6020	107			09/10/2014	RAL
Manganese - BSD	EPA-6020	107	0		09/10/2014	RAL
Selenium - BS	EPA-6020	105			09/10/2014	RAL
Selenium - BSD	EPA-6020	99.5	5		09/10/2014	RAL
Silver - BS	EPA-6020	112			09/10/2014	RAL
Silver - BSD	EPA-6020	108	4		09/10/2014	RAL
Sodium - BS	EPA-6020	104			09/10/2014	RAL
Sodium - BSD	EPA-6020	104	1		09/10/2014	RAL

ALS Test Batch ID: 86114 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-6020	101			09/17/2014	RAL
Arsenic - BSD	EPA-6020	104	3		09/17/2014	RAL
Barium - BS	EPA-6020	105			09/17/2014	RAL
Barium - BSD	EPA-6020	109	4		09/17/2014	RAL
Cadmium - BS	EPA-6020	102			09/17/2014	RAL
Cadmium - BSD	EPA-6020	106	3		09/17/2014	RAL
Chromium - BS	EPA-6020	102			09/17/2014	RAL
Chromium - BSD	EPA-6020	106	4		09/17/2014	RAL
Iron - BS	EPA-6020	107			09/17/2014	RAL
Iron - BSD	EPA-6020	110	3		09/17/2014	RAL
Lead - BS	EPA-6020	104			09/17/2014	RAL
Lead - BSD	EPA-6020	108	3		09/17/2014	RAL
Manganese - BS	EPA-6020	102			09/17/2014	RAL
Manganese - BSD	EPA-6020	106	3		09/17/2014	RAL
Selenium - BS	EPA-6020	99.9			09/17/2014	RAL
Selenium - BSD	EPA-6020	103	3		09/17/2014	RAL
Silver - BS	EPA-6020	111			09/17/2014	RAL

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV14090051
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Silver - BSD	EPA-6020	114	3		09/17/2014	RAL
Sodium - BS	EPA-6020	103			09/17/2014	RAL
Sodium - BSD	EPA-6020	108	4		09/17/2014	RAL

APPROVED BY



Laboratory Director



Seattle/Edmonds (425) 770-0907
 Tacoma (253) 826-2493
 Spokane (509) 327-9737
 Portland (503) 642-1080

EV14090051

Revised 9/24/14 + nitrate (GAF)

Revised 9/16/14 GAF

Date 9/9/14

Chain-of-Custody Record 9/16/14 CCN

Page 1 of 1

Project Name <u>Yakima Coalfill</u>		Project No. <u>1198008.010-014</u>		Testing Parameters								Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated	
Project Location/Event <u>Yakima, WA</u>				[Grid of Testing Parameters with handwritten 'X' marks in various cells]									
Sampler's Name <u>Steve Shaw</u>													
Project Contact <u>Jeffrey Fellus</u>													
Send Results To <u>Jeffrey Fellus, Steve Shaw, Anne Helgeson</u>													
Sample ID	Date	Time	Matrix	No. of Containers	Observations/Comments								
MW-102 (S-S) 05/15/14	9/8/14	1015	S/L	4	Allow water samples to settle, collect subsurface clear portion NW1/4-Dx - run acid wash/water get cleanup NW1/4-Dx - run acid wash/water get cleanup Analyze for EPH if no specific product identified VOC/BTEX/VPM (sol): <u>X added 9/16/14 JAF</u> non-preserved preserved w/methanol preserved w/iodium bisulfate Freeze upon receipt Dissolved metal water samples field filtered Other: <u>X metals As Pb Cd Cr Hg (0.05)</u> <input checked="" type="checkbox"/> Analyzed 9/16/14 CCN <u>As</u> <u>Quinine</u>								
MW-102 (S-S) 07/15/14		1030		5									
MW-143 (S-S) 09/11/14	9/9/14	0810		4									
MW-102 (S-S) 05/11/14		0930		5									
MW-106 (S-S) 05/11/14		1405		4									
Special Shipment/Handling or Storage Requirements <u>1 sample of ice</u>				Method of Shipment <u>Fedex delivery</u>									
Relinquished by Signature <u>[Signature]</u> Printed Name <u>[Name]</u> Company <u>[Company]</u> Date <u>9/9/14</u> Time <u>1410</u>		Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____		Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____		Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____							

WHITE COPY - Project File

YELLOW COPY - Laboratory

PINK COPY - Client Representative

EW-001

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV1409 0051

Project: Yakima Landfill / #1148008. 010. 014

Received Date: 9/10/14 Received Time: 8:20 am By: SM

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express First Overnight

	Yes	No	N/A
Were custody seals on outside of sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>7</u> Where? <u>outside cooler (top)</u>			
Custody seal date: <u>9/9/14</u> Seal name: <u>Landau</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Received per 5035
low kits

(*) Very limited sample for #2.
One jar had small amount of soil. The other
was mainly big rocks. SM X

Were VOA vials checked for absence of air bubbles? Jar
Bubbles present in sample #: _____

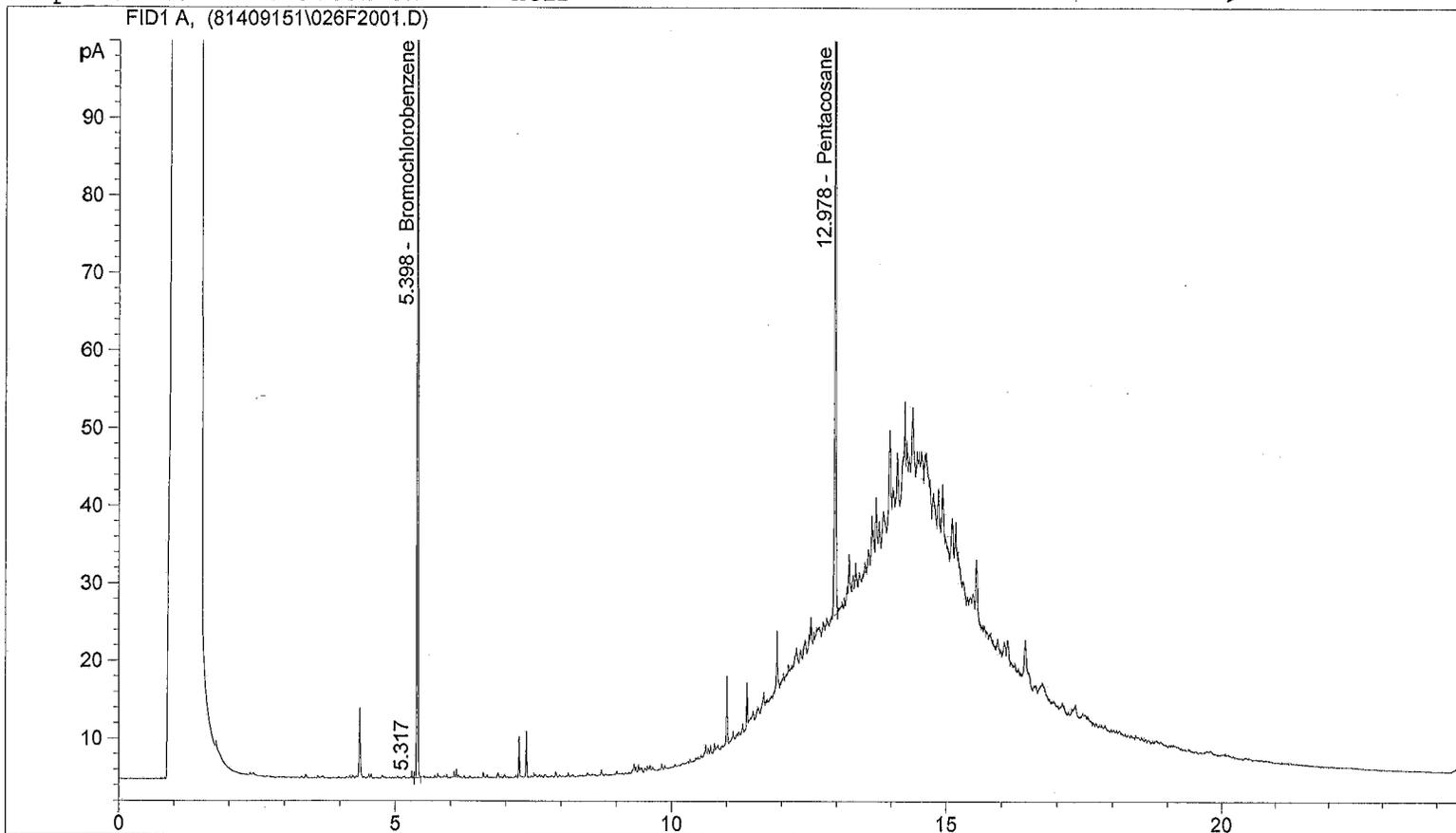
Temperature of cooler upon receipt: 2.5° on ice Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

Sample Name: EV14090051-01 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.398	FID1 A,	Bromochlorobenzene	370.653	39.082
12.978		Pentacosane	193.374	9.288

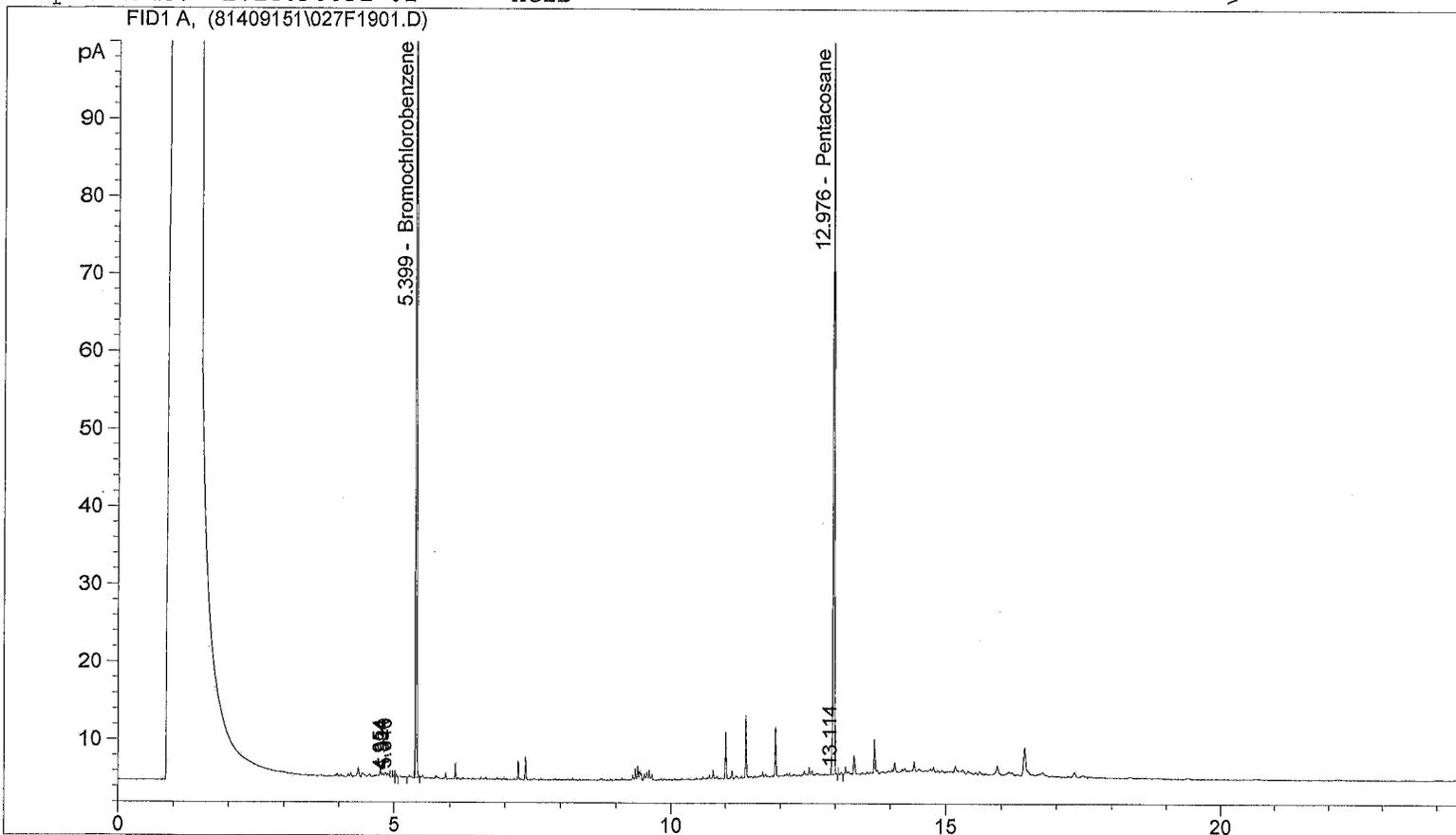
78%
93%

G < 20 mg/kg
 D < 50 mg/kg
 O > 100 mg/kg Lubric Oil

CA
9/15/14

09-16-14 ET

Sample Name: EV14090051-02 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	363.637	38.343
12.976		Pentacosane	176.909	8.497

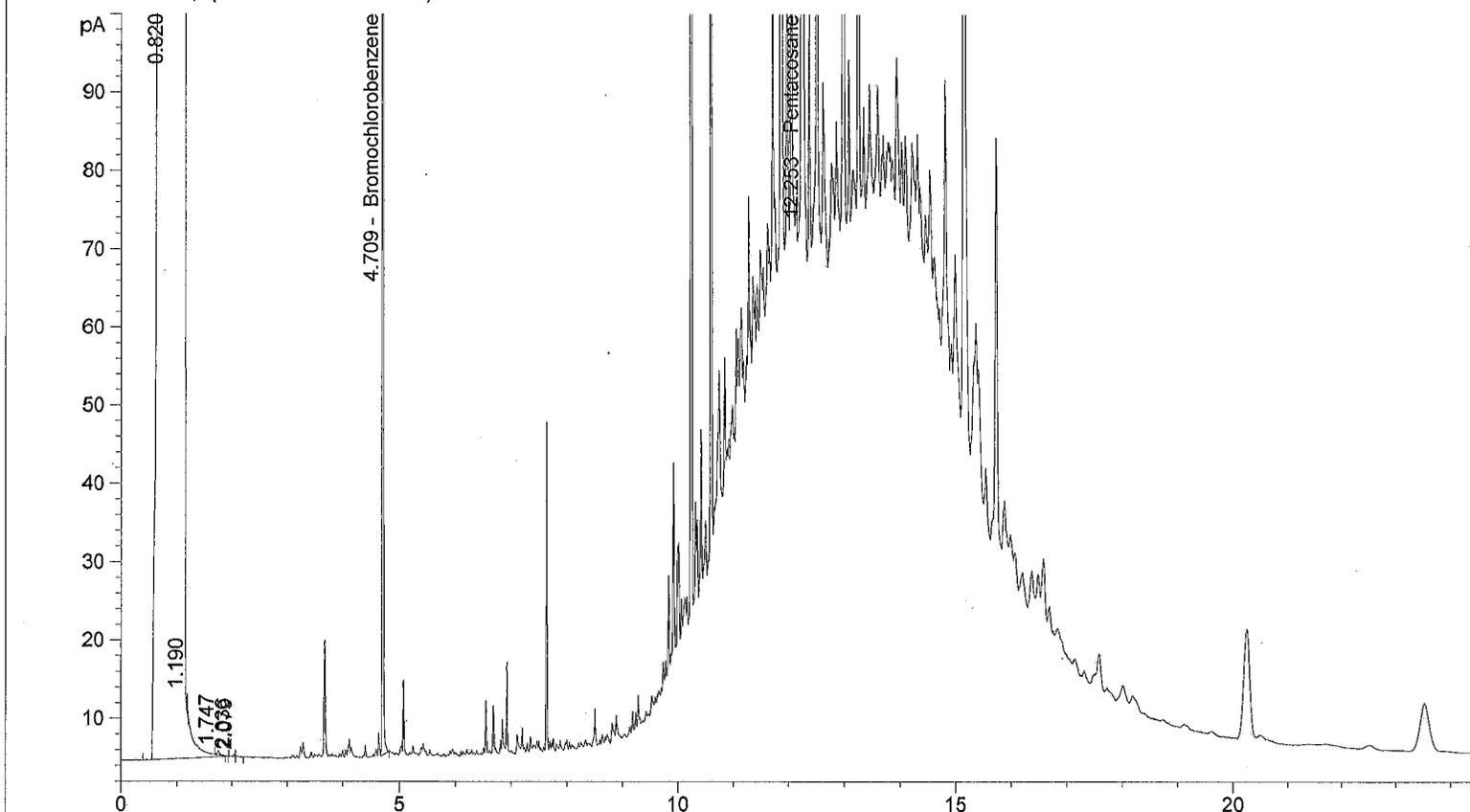
77/
85/

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

CV
 9/16/14

09.16.14

Sample Name: EV14090051-03 HCID ->
 FID2 B, (81409151\028B1901.D)



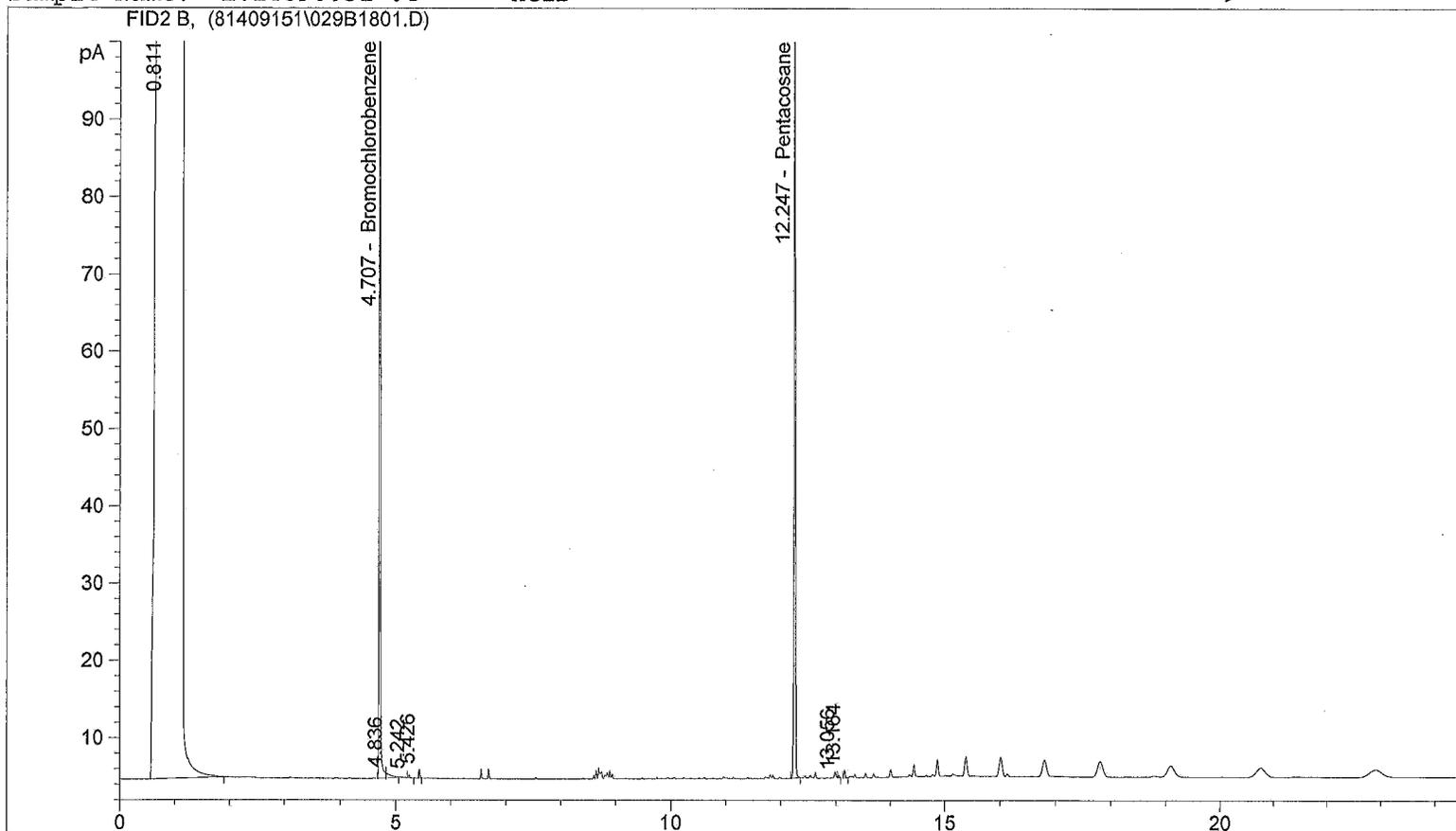
Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
4.709	FID2 B,	Bromochlorobenzene	508.691	47.038	94%
12.253		Pentacosane	185.250	7.338	73%

G < 20 mg/kg
 D < 50 mg/kg
 O > 100 mg/kg Unidentified Oil Range Product

(CW)
 9/16/14

09.16.14

Sample Name: EV14090051-04 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.707	FID2 B,	Bromochlorobenzene	371.027	34.309
12.247		Pentacosane	184.345	7.302

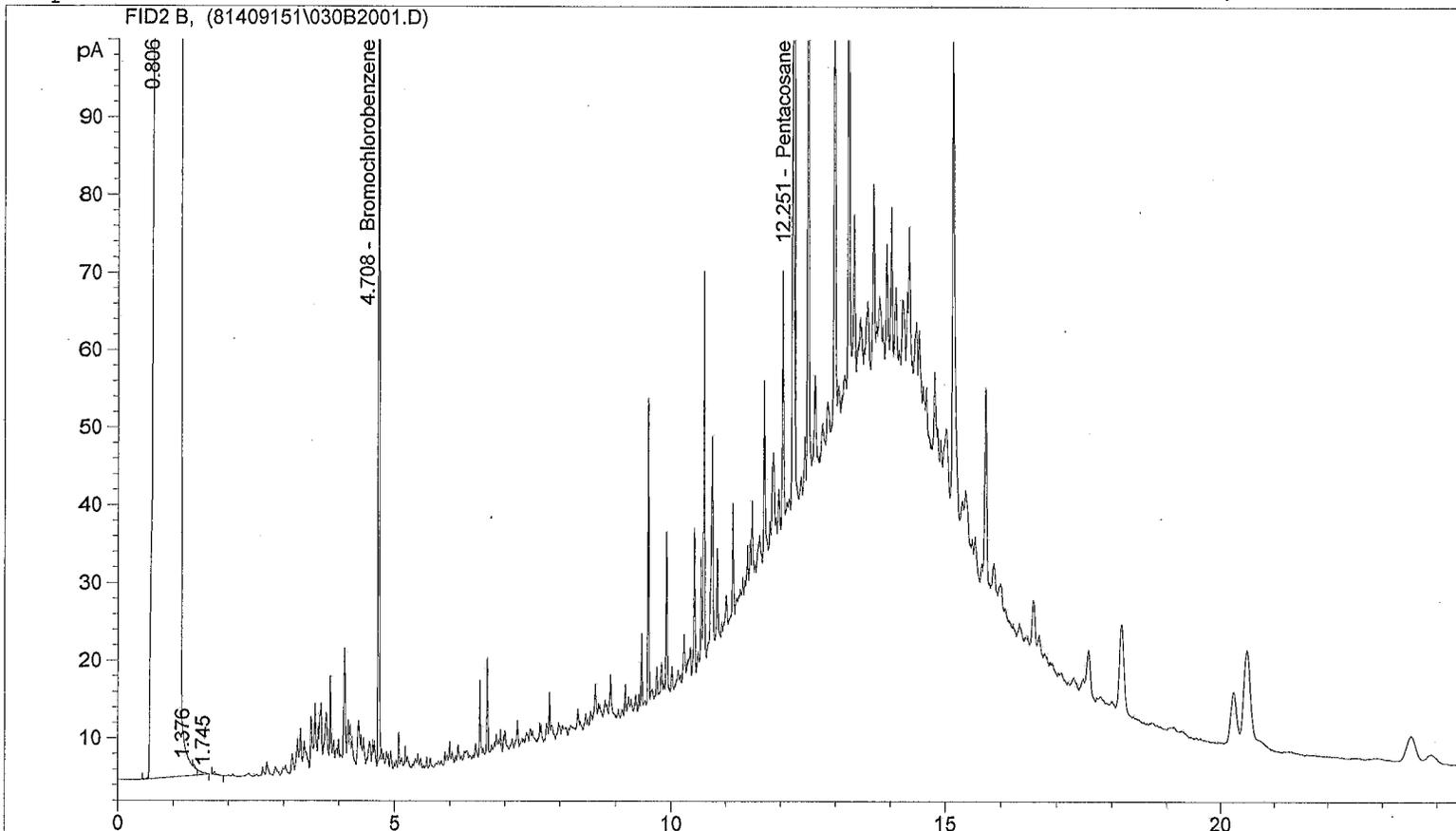
69%
78%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

Handwritten signature/initials

9/16/14

Sample Name: EV14090051-05 HCID



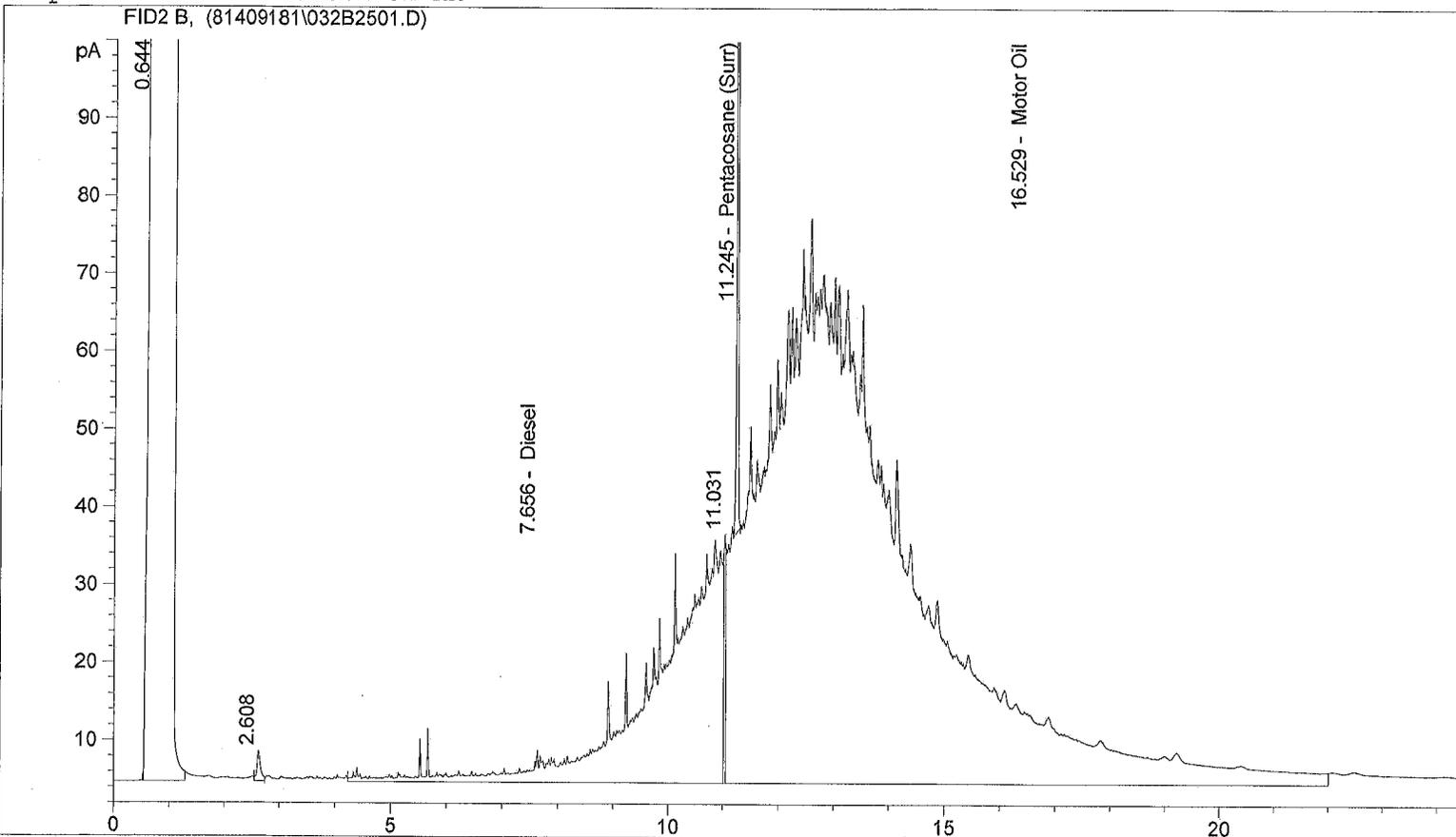
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene	399.575	36.948
12.251		Pentacosane	163.134	6.462

74%
65%

G > 20 mg/kg Unidentified Volatile Range Product
 D > 50 mg/kg Weathered Diesel or similar product
 O > 100 mg/kg Lubricant Oil

09.16.14
 (12)
 9/16/14

Sample Name: EV14090051-01 RR



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	2507.957	172.190
11.245		Pentacosane (Surr)	273.799	9.674
16.529		Motor Oil	12492.764	987.987

29.568

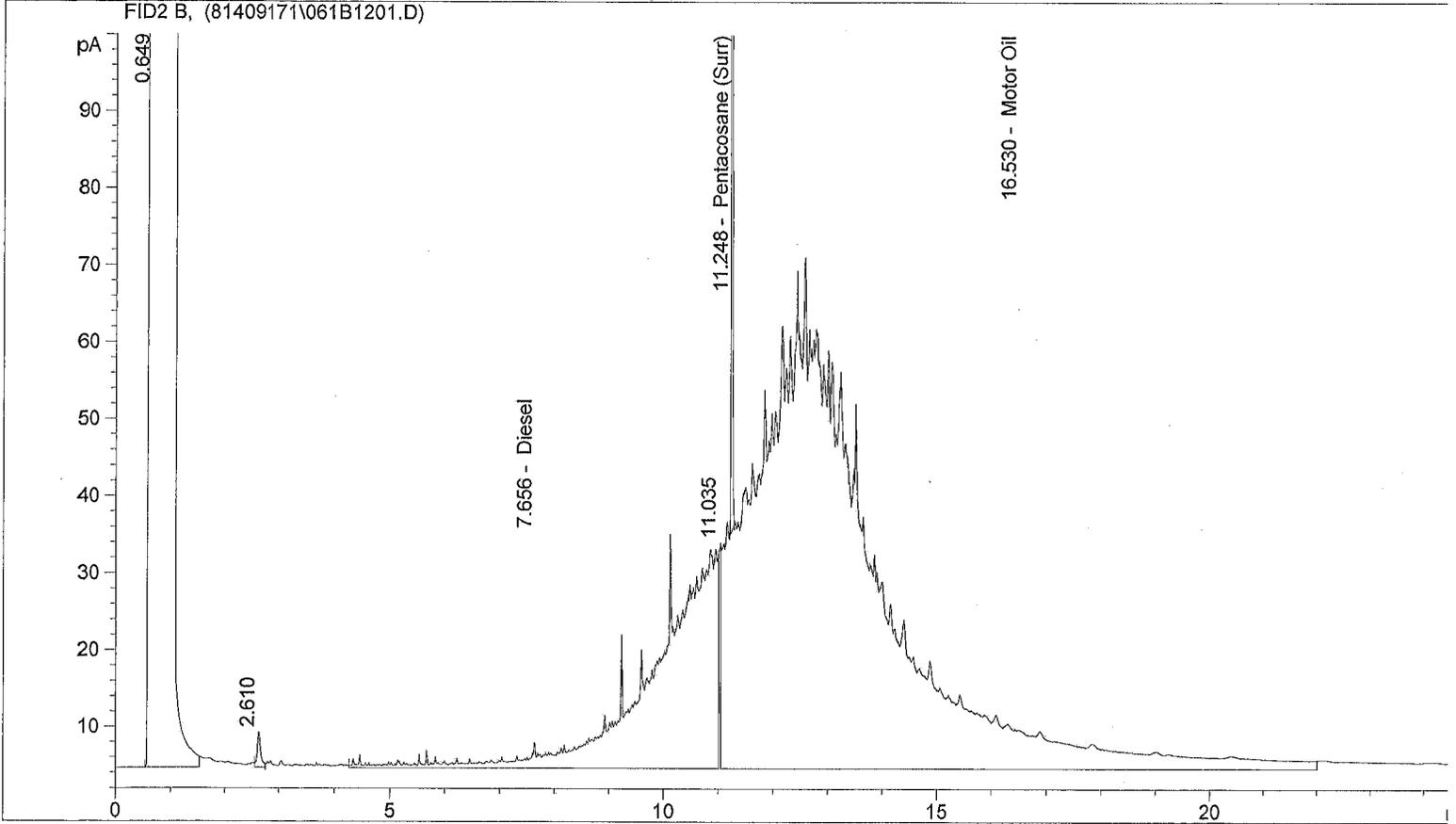
$D < 25 \text{ mg/kg}$

$O = 987.987 \text{ ug/mL} \times \frac{10 \text{ mL}}{29.568} = 330 \text{ mg/kg Lube Oil}$

09.23.14 ES

Handwritten signature/initials

Sample Name: EV14090051-01 SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	2308.898	158.523
11.248		Pentacosane (Surr)	296.635	10.481
16.530		Motor Oil	9642.778	762.597

105%

29.56g

$D < 25 \text{ mg/kg}$

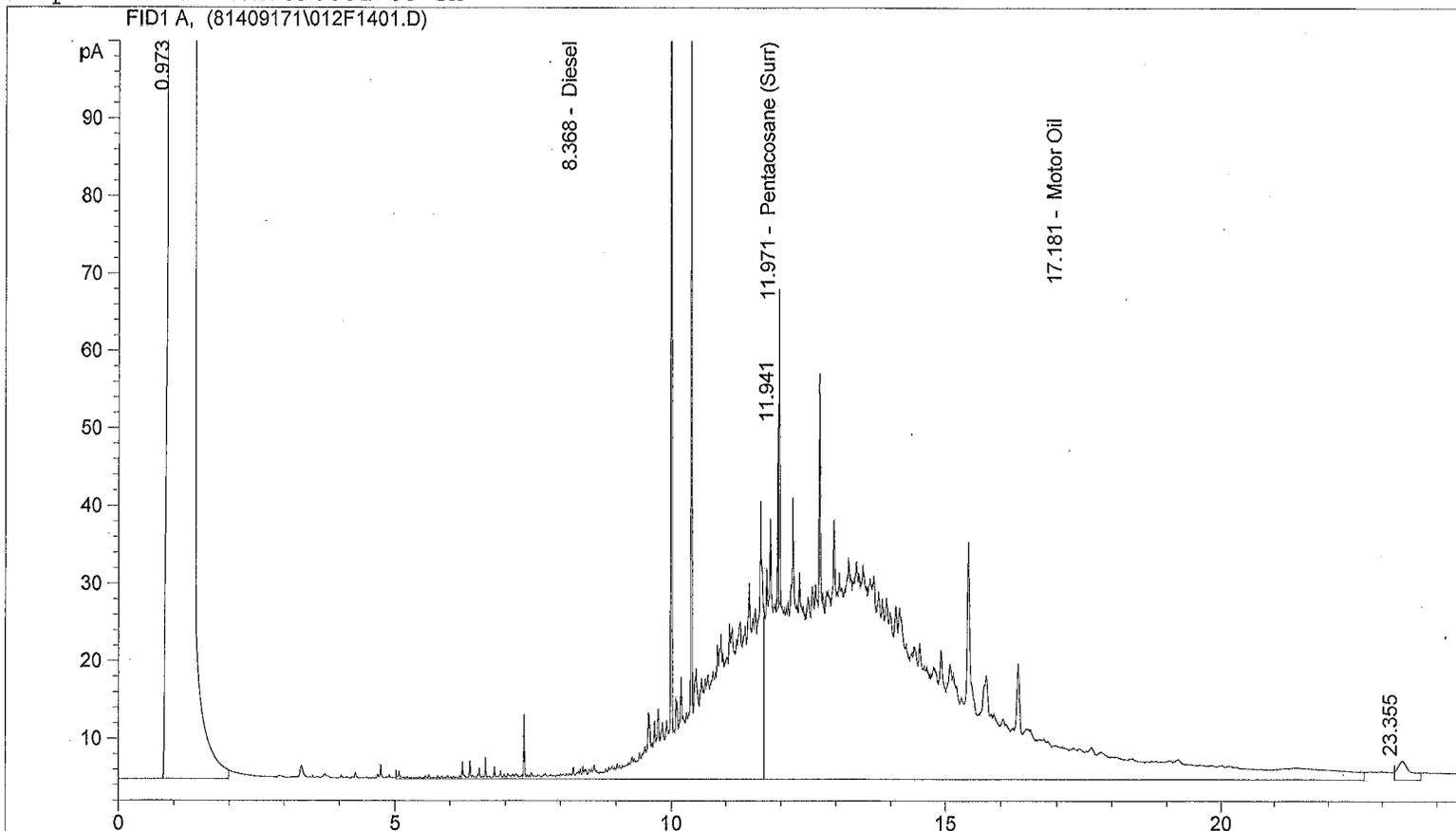
$O = 762.597 \text{ ug/mL} \times \frac{10 \text{ mL}}{29.56 \text{ g}} = 260 \text{ mg/kg Lube Oil}$

CAJ
9/22/14

09.23.14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409171\012F1401.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FDMO0714.M
 Injection Date & Time: 9/17/2014 4:06:05 PM 9/17/2014 4:06:05 PM
 Report Creation: 9/18/2014 12:24:03 PM

Sample Name: EV14090051-03 5X



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	2152.701	170.778
11.971		Pentacosane (Surr)	58.048	2.393
17.181		Motor Oil	6053.250	557.434

x5 = 120%

28.178

$$D = 170.778 \text{ ug/mL} \times \frac{10 \text{ mL}}{28.178} \times 5 = 300 \text{ mg/kg}$$

$$O = 557.434 \text{ ug/mL} \times \frac{10 \text{ mL}}{28.178} \times 5 = 990 \text{ mg/kg}$$

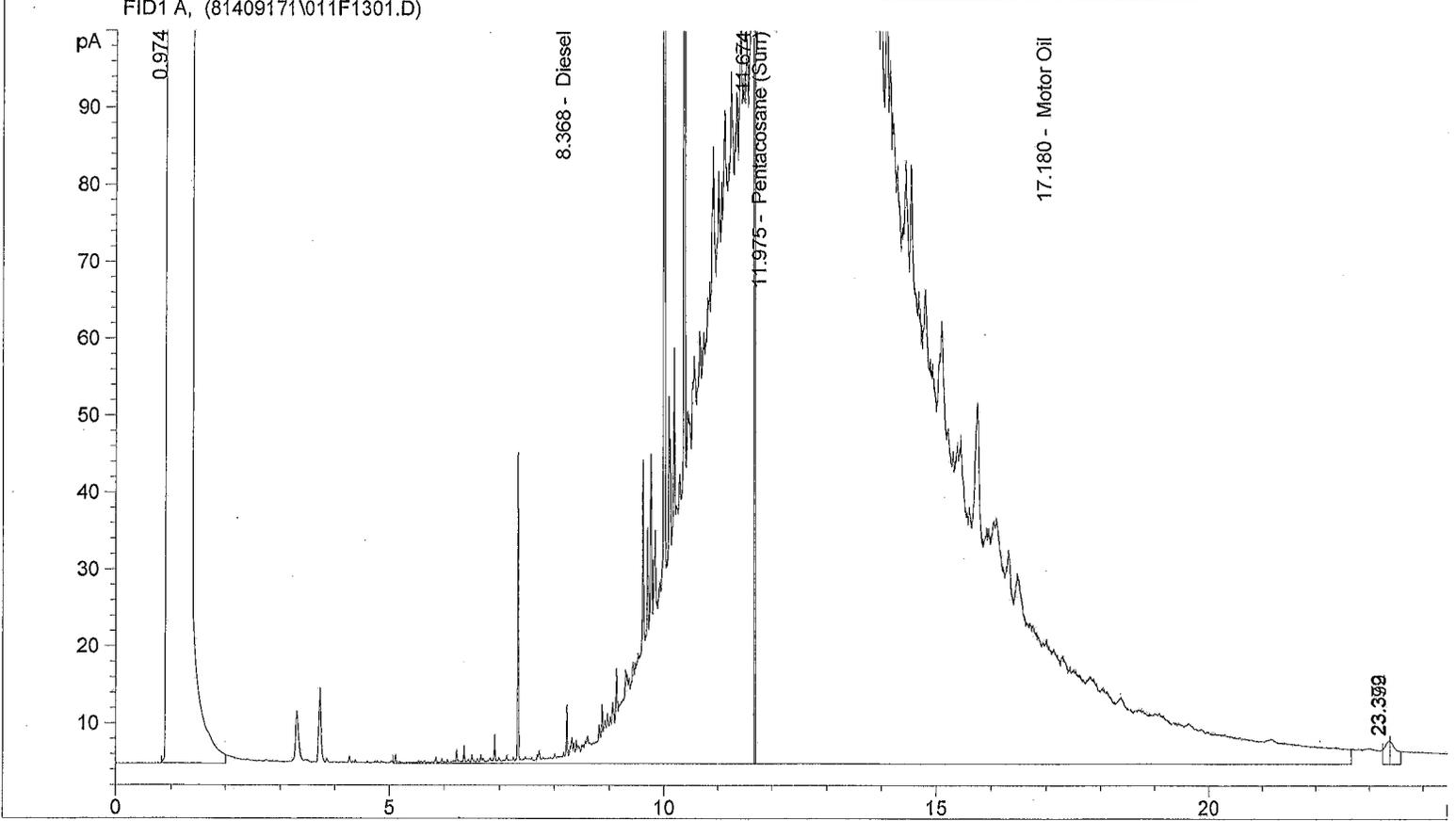
Light Oil and Lube Oil

or similar product

09.23.14 es

[Signature]

Sample Name: EV14090051-03 SGA



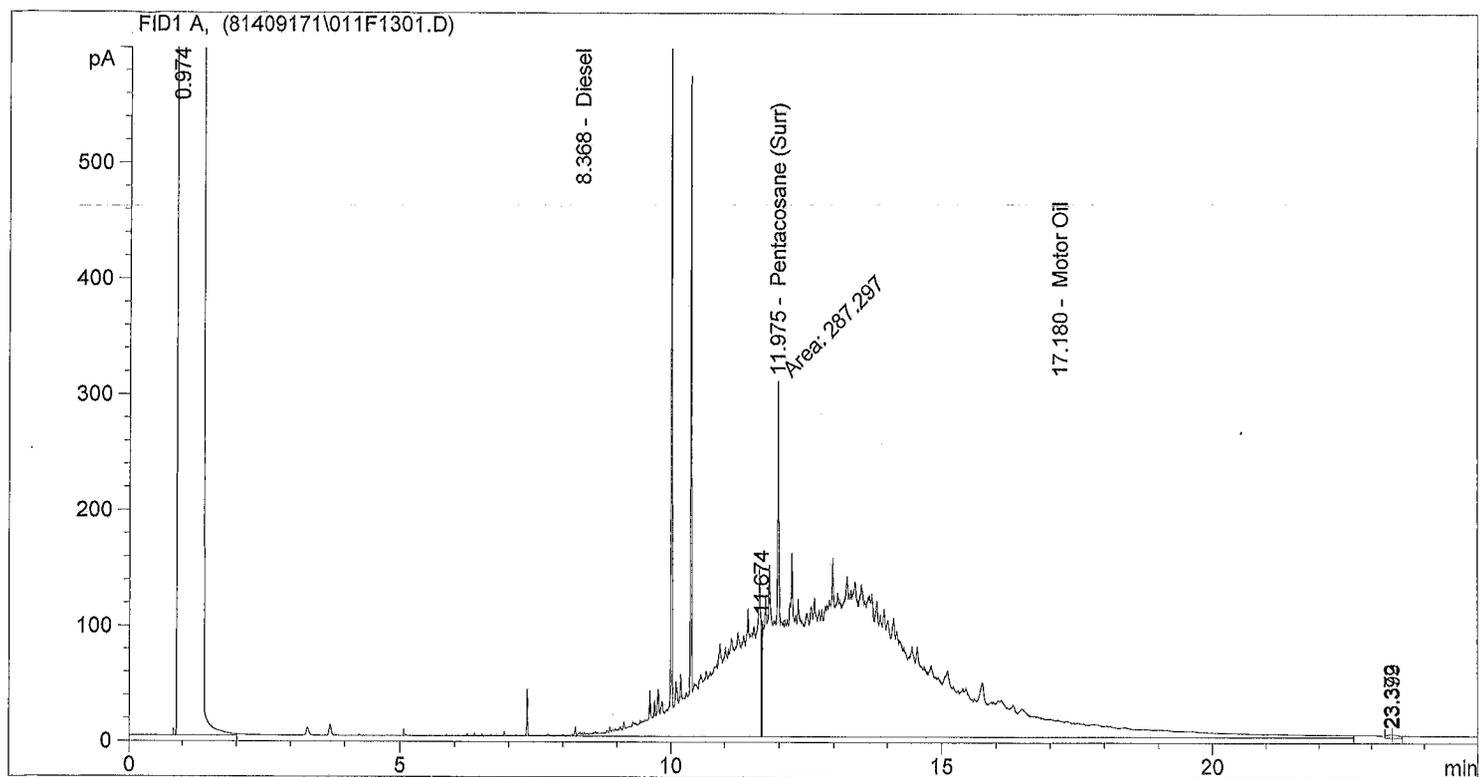
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	8985.519	712.840
11.975		Pentacosane (Surr)	287.297	11.843
17.180		Motor Oil	25008.029	2302.949

118 %
28.17g

$$D = 712.840 \text{ g/mL} \times \frac{10 \text{ mL}}{28.17 \text{ g}} = 250 \text{ mg/kg}$$

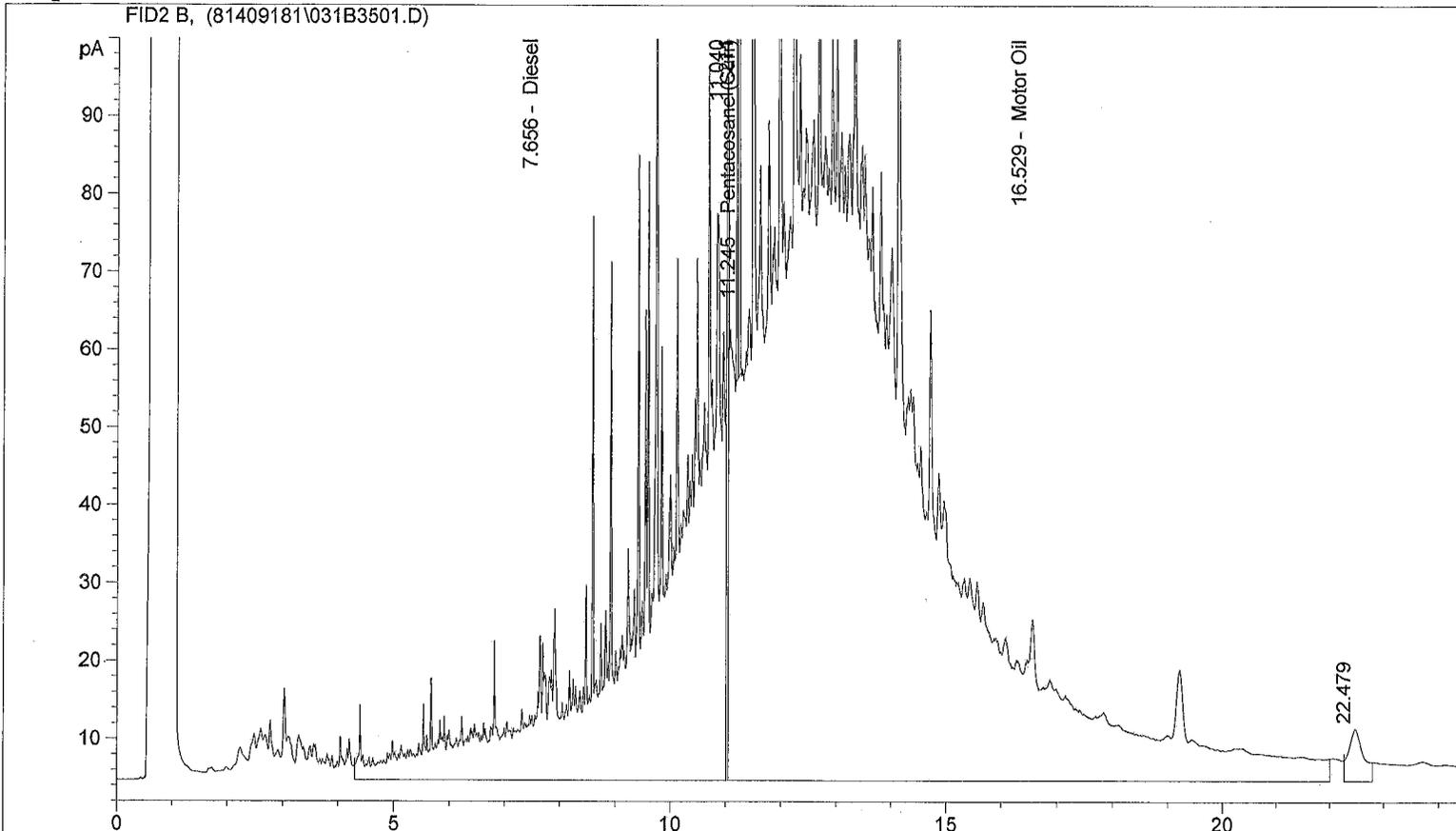
$$O = 2302.949 \text{ g/mL} \times \frac{10 \text{ mL}}{28.17 \text{ g}} = 820 \text{ mg/kg}$$

Light Oil and
Lube Oil
or similar product
CWS
9/20/14
09.23.14



*** End of Report ***

Sample Name: EV14090051-05 RR
 FID2 B, (81409181\031B3501.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	6477.538	444.732
11.245		Pentacosane (Surr)	279.204	9.865
16.529		Motor Oil	20253.352	1601.731

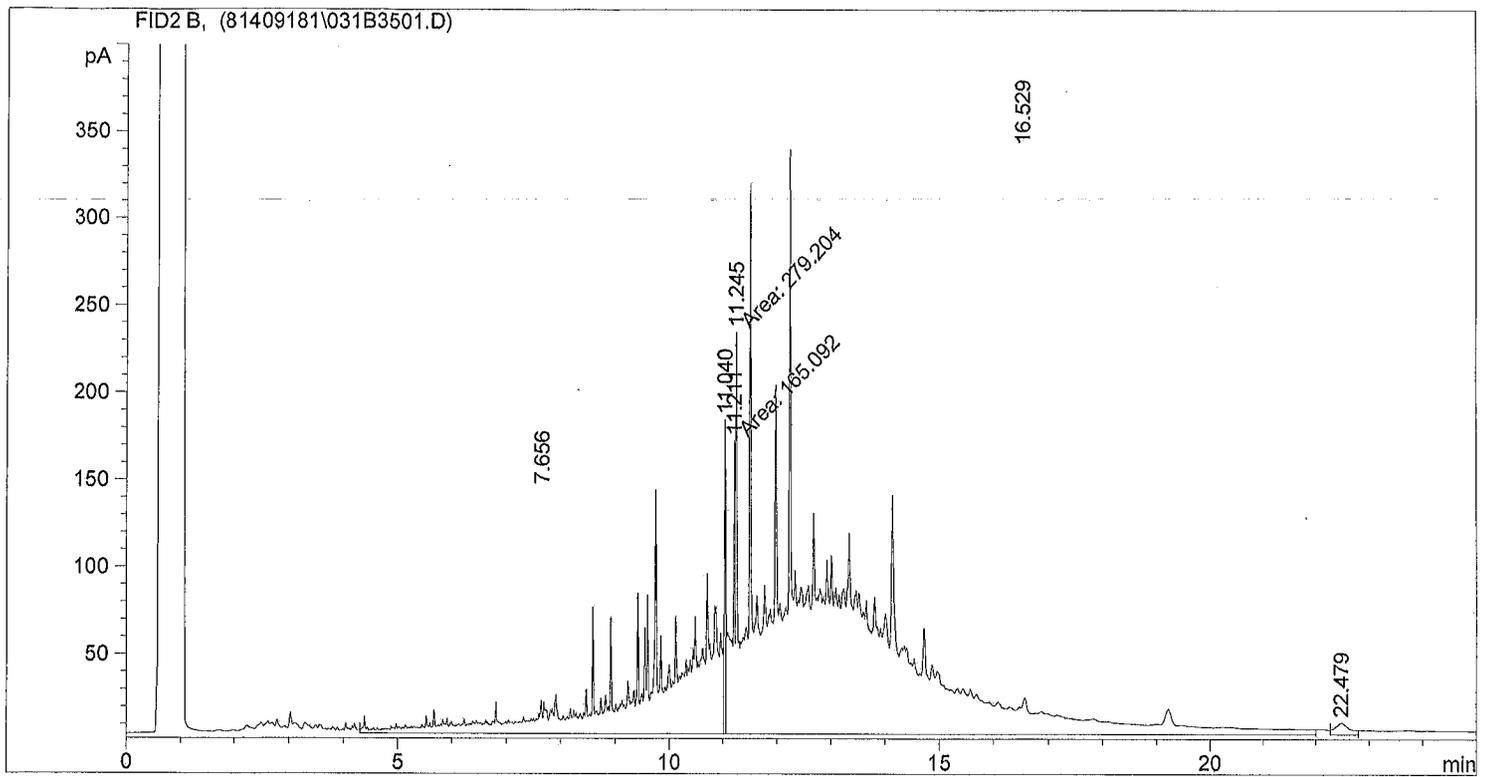
28.70g

$D = 444.732 \text{ ug/mL} \times \frac{10 \text{ mL}}{28.70 \text{ g}} = 150 \text{ mg/kg}$ Weathered Diesel Fuel
 (bias high due to Oil range product overlap)

$O = 1601.731 \text{ ug/mL} \times \frac{10 \text{ mL}}{28.70 \text{ g}} = 560 \text{ mg/kg}$ Lubricant Oil

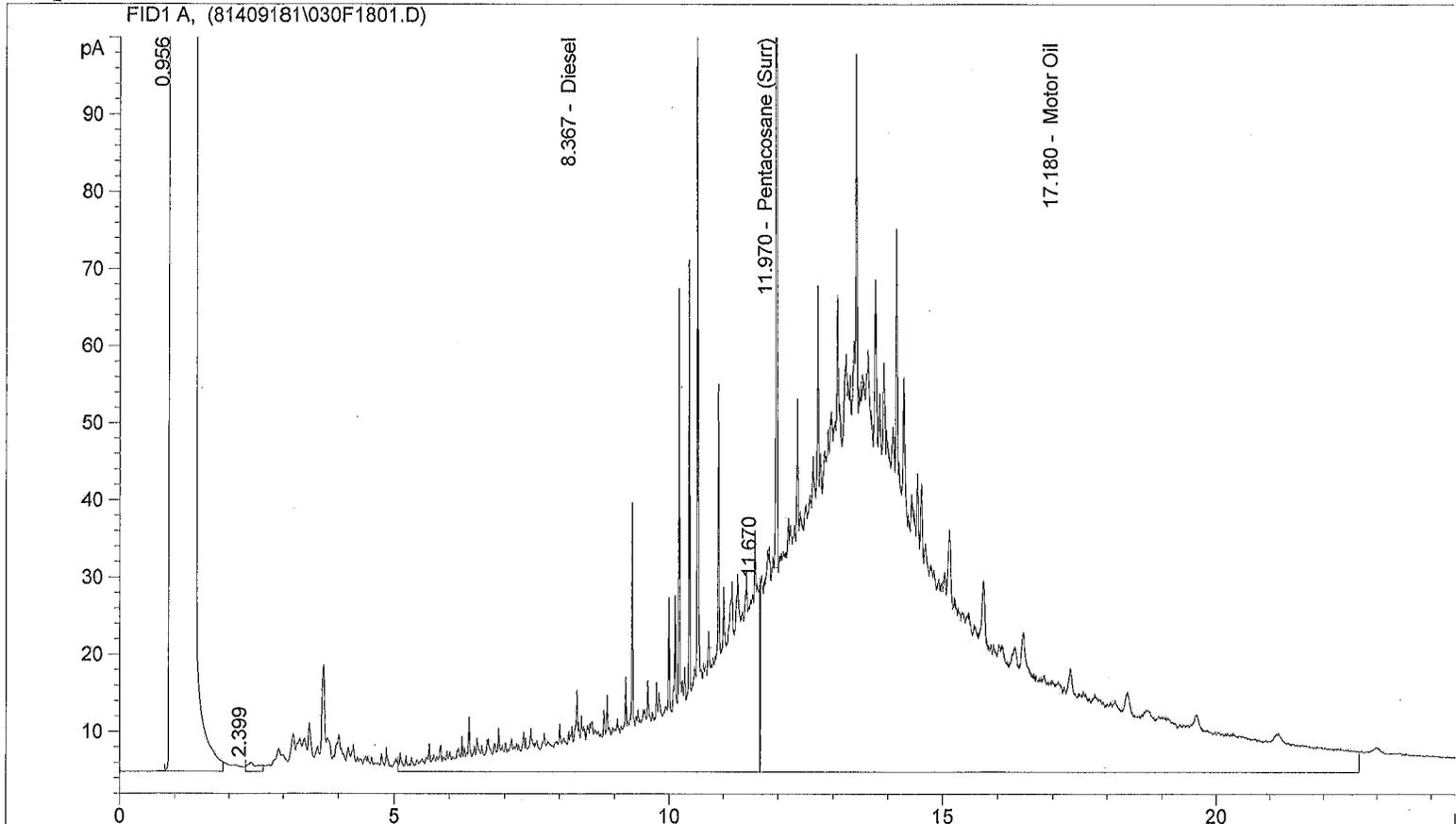
[Handwritten signature]
 9/23/14

09.23.14



*** End of Report ***

Sample Name: EV14090051-05 RR SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.367	FID1 A,	Diesel	3142.282	249.284
11.970		Pentacosane (Surr)	235.806	9.721
17.180		Motor Oil	11701.885	1077.608
				28.708

97%

$D = 249.284 \text{ ug/mL} \times \frac{10 \text{ mL}}{28.708} = 87 \text{ mg/kg Weathered Diesel Fuel}$

(bias high dust Oil Range Product overlap)

$D = 1077.608 \text{ ug/mL} \times \frac{10 \text{ mL}}{28.708} = 380 \text{ mg/kg Lubric Oil}$

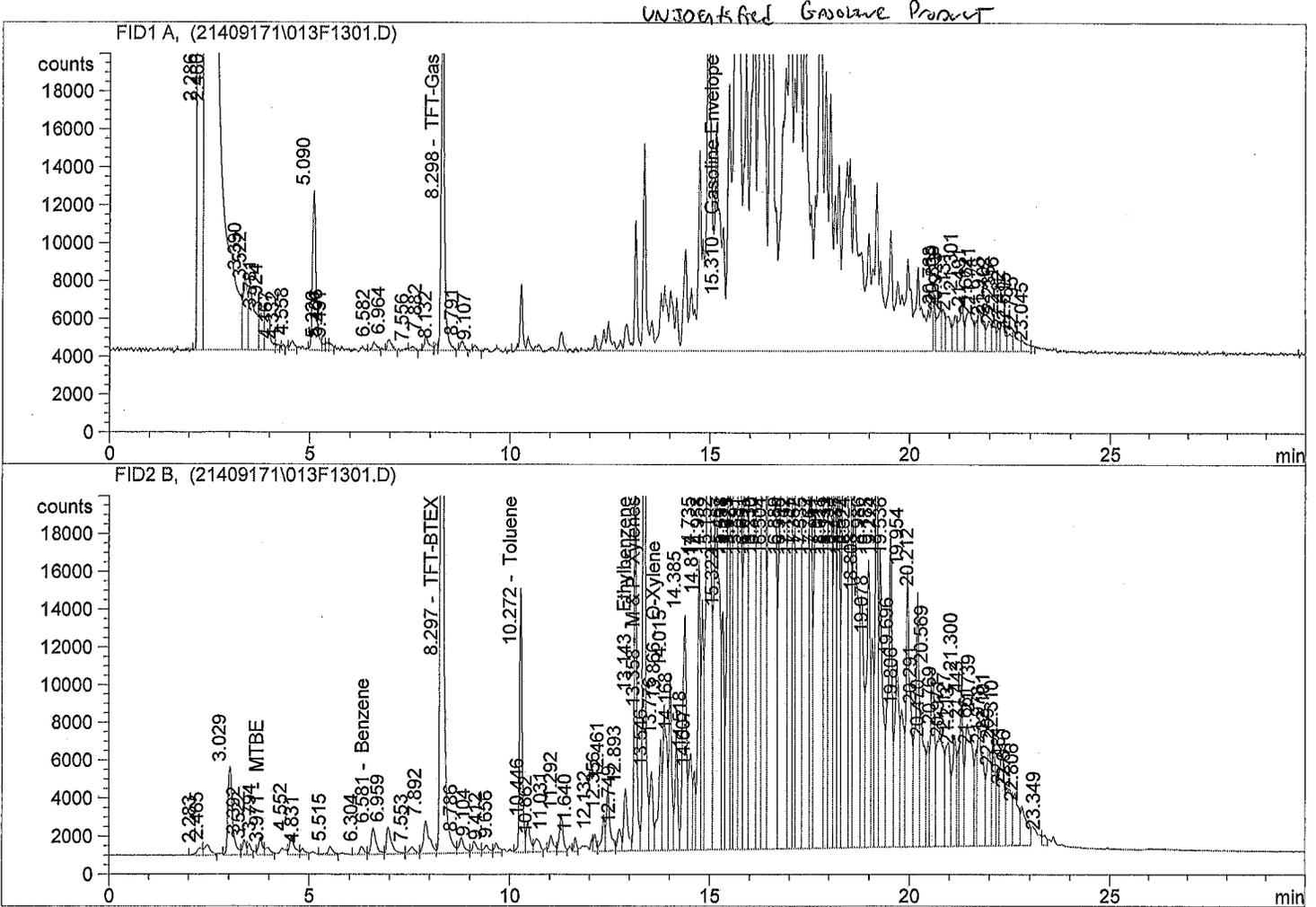
[Handwritten signature]
9/23/14

09.23.14

Gas/BTEX Instrument 2
 Data File: C:\HPCHEM\2\DATA\21409171\013F1301.D
 Injection Date & Time: 9/17/2014 2:38:47 PM
 Report Created on: 9/18/2014 9:24:43 AM
 Operator: DLC
 Acquisition Method: GB0214.M
 Analysis Method: C:\HPCHEM\2\METHODS\GB0214.M

FID1 A equivalent to FID analysis.
 FID2 B equivalent to PID analysis.

Sample Name: EV14090051-05 Dilution: X 0.0



Ret. Time	Compound Name	Area	Amount ug/L
8.298	TFT-Gas	104909.852	12.065
15.310	Gasoline Envelope	3.534e+006	714.588

5.45 g
 5.38 ml

$$GAJ = 714.588 \times \frac{5 \text{ ml}}{0.1 \text{ ml}} \times \frac{0.00538 \text{ L}}{5.45 \text{ g}} = 35 \text{ mg/kg}$$

Ret. Time	Compound Name	Area	Amount ug/L
3.971	MTBE	3913.001	0.155
6.581	Benzene	12115.874	0.178
8.297	TFT-BTEX	259927.844	14.180
10.272	Toluene	64258.898	1.262
13.143	Ethylbenzene	85724.602	2.334
13.358	M & P- Xylenes	169077.297	3.460
13.866	O-Xylene	51312.555	1.173

(C) 9/18/14

9-18-14



August 10, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On September 10th, 5 samples were received by our laboratory and assigned our laboratory project number EV14090051. The project was identified as your Yakima Landfill / #1148008.010.014. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report is being re-issued with lowered reporting limits for Chloroform. No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	8/10/2015
		ALS JOB#:	EV14090051
		ALS SAMPLE#:	EV14090051-02
CLIENT CONTACT:	Jeffrey Fellows	DATE RECEIVED:	09/10/2014
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	COLLECTION DATE:	9/8/2014 10:30:00 AM
CLIENT SAMPLE ID	MW-102 (15-15.5)-090814	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	09/11/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS JOB#: EV14090051
Edmonds, WA 98020 ALS SAMPLE#: EV14090051-04
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/10/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/9/2014 9:30:00 AM
CLIENT SAMPLE ID MW-107 (16-17)-090914 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	09/11/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS SDG#: EV14090051
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091014S - Batch 85939 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	QUAL	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U		UG/KG	8.0	09/10/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS SDG#: EV14090051
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 85939 - Soil by EPA-8260

Table with 6 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows include 1,1-Dichloroethene - BS, 1,1-Dichloroethene - BSD, Benzene - BS, Benzene - BSD, Toluene - BS, Toluene - BSD, Chlorobenzene - BS, Chlorobenzene - BSD.

APPROVED BY

Handwritten signature of Paul Bagum

Laboratory Director



October 8, 2014

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On September 12th, 4 samples were received by our laboratory and assigned our laboratory project number EV14090067. The project was identified as your Yakima Landfill / #1148008.010.014. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-01
CLIENT SAMPLE ID	MW-106 (13.5-14.5)-091014	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/10/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/19/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/19/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/19/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.034	1	ug/Kg	09/18/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/18/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.84	1	ug/Kg	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.89	1	ug/Kg	09/18/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-01
CLIENT SAMPLE ID	MW-106 (13.5-14.5)-091014	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/10/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/18/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.92	1	ug/Kg	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.97	1	ug/Kg	09/18/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	95	20	1	ug/Kg	09/17/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	61	20	1	ug/Kg	09/17/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	55	1	ug/Kg	09/17/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-01
CLIENT SAMPLE ID	MW-106 (13.5-14.5)-091014	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/10/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	29	20	1	ug/Kg	09/17/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoranthene	EPA-8270 SIM	28	20	1	ug/Kg	09/17/2014	GAP
Pyrene	EPA-8270 SIM	24	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	09/19/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	29	1	ug/Kg	09/19/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Aniline	EPA-8270	U	50	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	260	1	ug/Kg	09/19/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-01
CLIENT SAMPLE ID	MW-106 (13.5-14.5)-091014	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/10/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	43	1	ug/Kg	09/19/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	40	1	ug/Kg	09/19/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	23	1	ug/Kg	09/19/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	110	100	1	ug/Kg	09/19/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	180	1	ug/Kg	09/19/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	820	100	1	ug/Kg	09/19/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-01
CLIENT SAMPLE ID	MW-106 (13.5-14.5)-091014	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/10/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
PCB-1016	EPA-8082	U	0.0064	1	MG/KG	10/02/2014	CAS
PCB-1221	EPA-8082	U	0.013	1	MG/KG	10/02/2014	CAS
PCB-1232	EPA-8082	U	0.0064	1	MG/KG	10/02/2014	CAS
PCB-1242	EPA-8082	0.028	0.0064	1	MG/KG	10/02/2014	CAS
PCB-1248	EPA-8082	U	0.0064	1	MG/KG	10/02/2014	CAS
PCB-1254	EPA-8082	U	0.0064	1	MG/KG	10/02/2014	CAS
PCB-1260	EPA-8082	U	0.0064	1	MG/KG	10/02/2014	CAS
A-BHC	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
G-BHC	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
B-BHC	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
Heptachlor	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
D-BHC	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
Aldrin	EPA-8081	0.0094	0.0032	1	MG/KG	09/25/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
Chlordane	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
Endosulfan I	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
4,4'-DDE	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
Dieldrin	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
Endrin	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
4,4'-DDD	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
Endosulfan II	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
4,4'-DDT	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
Methoxychlor	EPA-8081	U	0.0032	1	MG/KG	09/25/2014	CAS
Toxaphene	EPA-8081	U	0.16	1	MG/KG	09/25/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	10/02/2014	RAL
pH	EPA-9045	7.17	± 0.01	1	S.U.	09/12/2014	SMR
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/18/2014	GAP
Nitrate as N	EPA-300.0M	26	0.50	1	MG/KG	09/18/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/18/2014	GAP
Mercury	EPA-7471	0.035	0.020	1	MG/KG	09/19/2014	RAL
Arsenic	EPA-6020	2.1	1.0	5	MG/KG	09/15/2014	RAL
Barium	EPA-6020	94	0.50	5	MG/KG	09/15/2014	RAL
Cadmium	EPA-6020	1.1	0.50	5	MG/KG	09/15/2014	RAL
Chromium	EPA-6020	16	0.50	5	MG/KG	09/15/2014	RAL
Iron	EPA-6020	24000	50	5	MG/KG	09/15/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-01
CLIENT SAMPLE ID	MW-106 (13.5-14.5)-091014	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/10/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	11	0.50	5	MG/KG	09/15/2014	RAL
Manganese	EPA-6020	210	0.50	5	MG/KG	09/15/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/15/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	09/15/2014	RAL
Sodium	EPA-6020	490	50	5	MG/KG	09/15/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	95.5	09/19/2014	EBS
C25	NWTPH-HCID	103	09/19/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	115	09/18/2014	DLC
Toluene-d8	EPA-8260	95.8	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	102	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	119	09/17/2014	GAP
Terphenyl-d14	EPA-8270 SIM	98.6	09/17/2014	GAP
2-Fluorophenol	EPA-8270	100	09/19/2014	GAP
Phenol-d5	EPA-8270	77.7	09/19/2014	GAP
Nitrobenzene-d5	EPA-8270	64.6	09/19/2014	GAP
2-Fluorobiphenyl	EPA-8270	74.6	09/19/2014	GAP
2,4,6-Tribromophenol	EPA-8270	82.0	09/19/2014	GAP
Terphenyl-d14	EPA-8270	79.1	09/19/2014	GAP
DCB	EPA-8082	64.0	10/02/2014	CAS
TCMX	EPA-8081	74.0	09/25/2014	CAS
DCB	EPA-8081	77.0	09/25/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-02
CLIENT SAMPLE ID	MW-100 (13.5-14)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/19/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/19/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/19/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.033	1	ug/Kg	09/18/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/18/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.81	1	ug/Kg	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.86	1	ug/Kg	09/18/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-02
CLIENT SAMPLE ID	MW-100 (13.5-14)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/18/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.89	1	ug/Kg	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.94	1	ug/Kg	09/18/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	48	1	ug/Kg	09/17/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-02
CLIENT SAMPLE ID	MW-100 (13.5-14)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	09/19/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	26	1	ug/Kg	09/19/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Aniline	EPA-8270	U	45	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	93	1	ug/Kg	09/19/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	90	1	ug/Kg	09/19/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	240	1	ug/Kg	09/19/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-02
CLIENT SAMPLE ID	MW-100 (13.5-14)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	38	1	ug/Kg	09/19/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	36	1	ug/Kg	09/19/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	21	1	ug/Kg	09/19/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	170	1	ug/Kg	09/19/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	110	100	1	ug/Kg	09/19/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-02
CLIENT SAMPLE ID	MW-100 (13.5-14)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
PCB-1016	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	MG/KG	10/02/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1242	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
A-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
G-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
B-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Heptachlor	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
D-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Aldrin	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Chlordane	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endosulfan I	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
4,4'-DDE	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Dieldrin	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endrin	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
4,4'-DDD	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endosulfan II	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
4,4'-DDT	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Methoxychlor	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Toxaphene	EPA-8081	U	0.13	1	MG/KG	09/25/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/20/2014	RAL
pH	EPA-9045	8.62	± 0.01	1	S.U.	09/12/2014	SMR
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/18/2014	GAP
Nitrate as N	EPA-300.0M	0.87	0.50	1	MG/KG	09/18/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/18/2014	GAP
Mercury	EPA-7471	U	0.020	1	MG/KG	09/19/2014	RAL
Arsenic	EPA-6020	1.4	1.0	5	MG/KG	09/15/2014	RAL
Barium	EPA-6020	58	0.50	5	MG/KG	09/15/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/15/2014	RAL
Chromium	EPA-6020	23	0.50	5	MG/KG	09/15/2014	RAL
Iron	EPA-6020	25000	50	5	MG/KG	09/15/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-02
CLIENT SAMPLE ID	MW-100 (13.5-14)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	2.9	0.50	5	MG/KG	09/15/2014	RAL
Manganese	EPA-6020	380	0.50	5	MG/KG	09/15/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/15/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	09/15/2014	RAL
Sodium	EPA-6020	750	50	5	MG/KG	09/15/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	96.6	09/19/2014	EBS
C25	NWTPH-HCID	98.5	09/19/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	112	09/18/2014	DLC
Toluene-d8	EPA-8260	94.9	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	107	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	99.8	09/17/2014	GAP
Terphenyl-d14	EPA-8270 SIM	206	09/17/2014	GAP
2-Fluorophenol	EPA-8270	98.2	09/19/2014	GAP
Phenol-d5	EPA-8270	76.7	09/19/2014	GAP
Nitrobenzene-d5	EPA-8270	62.0	09/19/2014	GAP
2-Fluorobiphenyl	EPA-8270	72.7	09/19/2014	GAP
2,4,6-Tribromophenol	EPA-8270	78.4	09/19/2014	GAP
Terphenyl-d14	EPA-8270	79.9	09/19/2014	GAP
DCB	EPA-8082	81.0	10/02/2014	CAS
TCMX	EPA-8081	84.0	09/25/2014	CAS
DCB	EPA-8081	83.0	09/25/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-03
CLIENT SAMPLE ID	MW-109 (5-5.5)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 2:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/19/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/19/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/19/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.041	1	ug/Kg	09/18/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/18/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.99	1	ug/Kg	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	1.0	1	ug/Kg	09/18/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-03
CLIENT SAMPLE ID	MW-109 (5-5.5)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 2:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/18/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	1.1	1	ug/Kg	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	1.1	1	ug/Kg	09/18/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	28	20	1	ug/Kg	09/17/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	48	1	ug/Kg	09/17/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-03
CLIENT SAMPLE ID	MW-109 (5-5.5)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 2:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	35	20	1	ug/Kg	09/17/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoranthene	EPA-8270 SIM	61	20	1	ug/Kg	09/17/2014	GAP
Pyrene	EPA-8270 SIM	47	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Chrysene	EPA-8270 SIM	24	20	1	ug/Kg	09/17/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	21	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	09/19/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	26	1	ug/Kg	09/19/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Aniline	EPA-8270	U	45	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	93	1	ug/Kg	09/19/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	90	1	ug/Kg	09/19/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	240	1	ug/Kg	09/19/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-03
CLIENT SAMPLE ID	MW-109 (5-5.5)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 2:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	38	1	ug/Kg	09/19/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	36	1	ug/Kg	09/19/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	21	1	ug/Kg	09/19/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	170	1	ug/Kg	09/19/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	100	100	1	ug/Kg	09/19/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-03
CLIENT SAMPLE ID	MW-109 (5-5.5)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 2:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
PCB-1016	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	MG/KG	10/02/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1242	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
A-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
G-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
B-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Heptachlor	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
D-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Aldrin	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Chlordane	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endosulfan I	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
4,4'-DDE	EPA-8081	0.022	0.0026	1	MG/KG	09/25/2014	CAS
Dieldrin	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endrin	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
4,4'-DDD	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endosulfan II	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
4,4'-DDT	EPA-8081	0.032	0.0026	1	MG/KG	09/25/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Methoxychlor	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Toxaphene	EPA-8081	U	0.13	1	MG/KG	09/25/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	10/02/2014	RAL
pH	EPA-9045	7.64	± 0.01	1	S.U.	09/12/2014	SMR
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/18/2014	GAP
Nitrate as N	EPA-300.0M	21	0.50	1	MG/KG	09/18/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/18/2014	GAP
Mercury	EPA-7471	0.061	0.020	1	MG/KG	09/19/2014	RAL
Arsenic	EPA-6020	5.4	1.0	5	MG/KG	09/15/2014	RAL
Barium	EPA-6020	150	0.50	5	MG/KG	09/15/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/15/2014	RAL
Chromium	EPA-6020	16	0.50	5	MG/KG	09/15/2014	RAL
Iron	EPA-6020	31000	50	5	MG/KG	09/15/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-03
CLIENT SAMPLE ID	MW-109 (5-5.5)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 2:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	39	0.50	5	MG/KG	09/15/2014	RAL
Manganese	EPA-6020	680	0.50	5	MG/KG	09/15/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/15/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	09/15/2014	RAL
Sodium	EPA-6020	670	50	5	MG/KG	09/15/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	80.0	09/19/2014	EBS
C25	NWTPH-HCID	85.7	09/19/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	118	09/18/2014	DLC
Toluene-d8	EPA-8260	97.6	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	117	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	124	09/17/2014	GAP
Terphenyl-d14	EPA-8270 SIM	107	09/17/2014	GAP
2-Fluorophenol	EPA-8270	98.7	09/19/2014	GAP
Phenol-d5	EPA-8270	77.2	09/19/2014	GAP
Nitrobenzene-d5	EPA-8270	59.7	09/19/2014	GAP
2-Fluorobiphenyl	EPA-8270	74.8	09/19/2014	GAP
2,4,6-Tribromophenol	EPA-8270	79.3	09/19/2014	GAP
Terphenyl-d14	EPA-8270	80.6	09/19/2014	GAP
DCB	EPA-8082	71.0	10/02/2014	CAS
TCMX	EPA-8081	81.0	09/25/2014	CAS
DCB	EPA-8081	84.0	09/25/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-04
CLIENT SAMPLE ID	MW-109 (12.5-13)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/19/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/19/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/19/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.033	1	ug/Kg	09/18/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/18/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.80	1	ug/Kg	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.85	1	ug/Kg	09/18/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-04
CLIENT SAMPLE ID	MW-109 (12.5-13)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/18/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.88	1	ug/Kg	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.92	1	ug/Kg	09/18/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	51	1	ug/Kg	09/18/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-04
CLIENT SAMPLE ID	MW-109 (12.5-13)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/18/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	09/19/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	24	1	ug/Kg	09/19/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Aniline	EPA-8270	U	42	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	87	1	ug/Kg	09/19/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	84	1	ug/Kg	09/19/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	220	1	ug/Kg	09/19/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-04
CLIENT SAMPLE ID	MW-109 (12.5-13)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	36	1	ug/Kg	09/19/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	33	1	ug/Kg	09/19/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	19	1	ug/Kg	09/19/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	150	1	ug/Kg	09/19/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	190	100	1	ug/Kg	09/19/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-04
CLIENT SAMPLE ID	MW-109 (12.5-13)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
PCB-1016	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	MG/KG	10/02/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1242	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
A-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
G-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
B-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Heptachlor	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
D-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Aldrin	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Chlordane	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endosulfan I	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
4,4'-DDE	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Dieldrin	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endrin	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
4,4'-DDD	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endosulfan II	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
4,4'-DDT	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Methoxychlor	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Toxaphene	EPA-8081	U	0.13	1	MG/KG	09/25/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	10/02/2014	RAL
pH	EPA-9045	8.42	± 0.01	1	S.U.	09/12/2014	SMR
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/18/2014	GAP
Nitrate as N	EPA-300.0M	1.2	0.50	1	MG/KG	09/18/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/18/2014	GAP
Mercury	EPA-7471	U	0.020	1	MG/KG	09/19/2014	RAL
Arsenic	EPA-6020	1.7	1.0	5	MG/KG	09/15/2014	RAL
Barium	EPA-6020	63	0.50	5	MG/KG	09/15/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	09/15/2014	RAL
Chromium	EPA-6020	14	0.50	5	MG/KG	09/15/2014	RAL
Iron	EPA-6020	23000	50	5	MG/KG	09/15/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090067-04
CLIENT SAMPLE ID	MW-109 (12.5-13)-091114	DATE RECEIVED:	09/12/2014
		COLLECTION DATE:	9/11/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	3.4	0.50	5	MG/KG	09/15/2014	RAL
Manganese	EPA-6020	360	0.50	5	MG/KG	09/15/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	09/15/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	09/15/2014	RAL
Sodium	EPA-6020	680	50	5	MG/KG	09/15/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	78.6	09/19/2014	EBS
C25	NWTPH-HCID	85.0	09/19/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	115	09/18/2014	DLC
Toluene-d8	EPA-8260	95.1	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	105	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	120	09/18/2014	GAP
Terphenyl-d14	EPA-8270 SIM	121	09/18/2014	GAP
2-Fluorophenol	EPA-8270	106	09/19/2014	GAP
Phenol-d5	EPA-8270	83.8	09/19/2014	GAP
Nitrobenzene-d5	EPA-8270	64.2	09/19/2014	GAP
2-Fluorobiphenyl	EPA-8270	80.0	09/19/2014	GAP
2,4,6-Tribromophenol	EPA-8270	87.2	09/19/2014	GAP
Terphenyl-d14	EPA-8270	90.4	09/19/2014	GAP
DCB	EPA-8082	82.0	10/02/2014	CAS
TCMX	EPA-8081	78.0	09/25/2014	CAS
DCB	EPA-8081	76.0	09/25/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090067
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091814S - Batch 86196 - Soil by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	09/19/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	09/19/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	09/19/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091814S - Batch 86175 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.029	1	ug/Kg	09/18/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	09/18/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.69	1	ug/Kg	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-091814S - Batch 86175 - Soil by EPA-8260

Toluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.74	1	ug/Kg	09/18/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	09/18/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.76	1	ug/Kg	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.80	1	ug/Kg	09/18/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	09/18/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-091614S - Batch 86098 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	77	1	ug/Kg	09/17/2014	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091814S - Batch 86185 - Soil by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	200	1	ug/Kg	09/19/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	33	1	ug/Kg	09/19/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Aniline	EPA-8270	U	58	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	120	1	ug/Kg	09/19/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	120	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-091814S - Batch 86185 - Soil by EPA-8270

Hexachloroethane	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	310	1	ug/Kg	09/19/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	09/19/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	49	1	ug/Kg	09/19/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	46	1	ug/Kg	09/19/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	27	1	ug/Kg	09/19/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090067
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091814S - Batch 86185 - Soil by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Anthracene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	09/19/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	210	1	ug/Kg	09/19/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	09/19/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-10/02/2014 - Batch R242451 - Soil by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	MG/KG	10/02/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1242	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	MG/KG	10/02/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-09/25/2014 - Batch R242445 - Soil by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
G-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
B-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Heptachlor	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
D-BHC	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Aldrin	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Chlordane	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endosulfan I	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
4,4'-DDE	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Dieldrin	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endrin	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090067
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB1-09/25/2014 - Batch R242445 - Soil by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4,4'-DDD	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endosulfan II	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
4,4'-DDT	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Methoxychlor	EPA-8081	U	0.0026	1	MG/KG	09/25/2014	CAS
Toxaphene	EPA-8081	U	0.13	1	MG/KG	09/25/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-1022014 - Batch R242166 - Soil by EPA-7196

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	10/02/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-242453 - Batch R242453 - Soil by EPA-7196

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/20/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9172014 - Batch R241241 - Soil by EPA-300.0M

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoride	EPA-300.0M	U	1.6	1	MG/KG	09/17/2014	GAP
Nitrate as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP
Nitrite as N	EPA-300.0M	U	0.50	1	MG/KG	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9192014 - Batch R241162 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	0.020	1	MG/KG	09/19/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091514S - Batch 86039 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	0.20	1	MG/KG	09/15/2014	RAL
Barium	EPA-6020	U	0.10	1	MG/KG	09/15/2014	RAL

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
		ALS SDG#:	EV14090067
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Jeffrey Fellows		
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014		

LABORATORY BLANK RESULTS

MB-091514S - Batch 86039 - Soil by EPA-6020

Cadmium	EPA-6020	U	0.10	1	MG/KG	09/15/2014	RAL
Chromium	EPA-6020	U	0.10	1	MG/KG	09/15/2014	RAL
Iron	EPA-6020	U	10	1	MG/KG	09/15/2014	RAL
Lead	EPA-6020	U	0.10	1	MG/KG	09/15/2014	RAL
Manganese	EPA-6020	U	0.10	1	MG/KG	09/15/2014	RAL
Selenium	EPA-6020	U	1.0	1	MG/KG	09/15/2014	RAL
Silver	EPA-6020	U	0.10	1	MG/KG	09/15/2014	RAL
Sodium	EPA-6020	U	10	1	MG/KG	09/15/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 86175 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	112			09/18/2014	DLC
1,1-Dichloroethene - BSD	EPA-8260	98.2	13		09/18/2014	DLC
Benzene - BS	EPA-8260	102			09/18/2014	DLC
Benzene - BSD	EPA-8260	101	2		09/18/2014	DLC
Trichloroethene - BS	EPA-8260	96.9			09/18/2014	DLC
Trichloroethene - BSD	EPA-8260	95.0	2		09/18/2014	DLC
Toluene - BS	EPA-8260	97.7			09/18/2014	DLC
Toluene - BSD	EPA-8260	95.5	2		09/18/2014	DLC
Chlorobenzene - BS	EPA-8260	94.8			09/18/2014	DLC
Chlorobenzene - BSD	EPA-8260	95.2	0		09/18/2014	DLC

ALS Test Batch ID: 86098 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	EPA-8270 SIM	65.6			09/17/2014	GAP
Naphthalene - BSD	EPA-8270 SIM	68.8	5		09/17/2014	GAP
Acenaphthene - BS	EPA-8270 SIM	69.1			09/17/2014	GAP
Acenaphthene - BSD	EPA-8270 SIM	65.6	5		09/17/2014	GAP
Pentachlorophenol - BS	EPA-8270 SIM	102			09/17/2014	GAP
Pentachlorophenol - BSD	EPA-8270 SIM	72.2	34		09/17/2014	GAP
Pyrene - BS	EPA-8270 SIM	73.0			09/17/2014	GAP
Pyrene - BSD	EPA-8270 SIM	90.8	22		09/17/2014	GAP
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	61.7			09/17/2014	GAP
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	66.5	8		09/17/2014	GAP

ALS Test Batch ID: 86185 - Soil by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	64.9			09/19/2014	GAP
Phenol - BSD	EPA-8270	89.4	32		09/19/2014	GAP
2-Chlorophenol - BS	EPA-8270	68.3			09/19/2014	GAP
2-Chlorophenol - BSD	EPA-8270	90.8	28		09/19/2014	GAP
1,4-Dichlorobenzene - BS	EPA-8270	72.0			09/19/2014	GAP
1,4-Dichlorobenzene - BSD	EPA-8270	90.1	22		09/19/2014	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	79.8			09/19/2014	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	103	25		09/19/2014	GAP
1,2,4-Trichlorobenzene - BS	EPA-8270	69.7			09/19/2014	GAP
1,2,4-Trichlorobenzene - BSD	EPA-8270	87.8	23		09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 10/8/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV14090067
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
4-Chloro-3-Methylphenol - BS	EPA-8270	70.2			09/19/2014	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	92.4	27		09/19/2014	GAP
Acenaphthene - BS	EPA-8270	78.0			09/19/2014	GAP
Acenaphthene - BSD	EPA-8270	98.3	23		09/19/2014	GAP
4-Nitrophenol - BS	EPA-8270	62.5			09/19/2014	GAP
4-Nitrophenol - BSD	EPA-8270	88.8	35		09/19/2014	GAP
2,4-Dinitrotoluene - BS	EPA-8270	64.7			09/19/2014	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	81.7	23		09/19/2014	GAP
Pyrene - BS	EPA-8270	79.5			09/19/2014	GAP
Pyrene - BSD	EPA-8270	101	24		09/19/2014	GAP

ALS Test Batch ID: R242451 - Soil by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	97.5			10/02/2014	CAS
PCB-1260 - BS	EPA-8082	104			10/02/2014	CAS

ALS Test Batch ID: R242445 - Soil by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	82.4			09/25/2014	CAS
G-BHC - BS	EPA-8081	82.3			09/25/2014	CAS
B-BHC - BS	EPA-8081	77.9			09/25/2014	CAS
Heptachlor - BS	EPA-8081	81.7			09/25/2014	CAS
D-BHC - BS	EPA-8081	87.6			09/25/2014	CAS
Aldrin - BS	EPA-8081	77.0			09/25/2014	CAS
Heptachlor Epoxide - BS	EPA-8081	79.6			09/25/2014	CAS
Chlordane - BS	EPA-8081	79.0			09/25/2014	CAS
Endosulfan I - BS	EPA-8081	61.5			09/25/2014	CAS
4,4'-DDE - BS	EPA-8081	82.4			09/25/2014	CAS
Dieldrin - BS	EPA-8081	82.5			09/25/2014	CAS
Endrin - BS	EPA-8081	86.4			09/25/2014	CAS
4,4'-DDD - BS	EPA-8081	85.6			09/25/2014	CAS
Endosulfan II - BS	EPA-8081	70.6			09/25/2014	CAS
4,4'-DDT - BS	EPA-8081	86.7			09/25/2014	CAS
Endrin Aldehyde - BS	EPA-8081	95.0			09/25/2014	CAS
Endosulfan Sulfate - BS	EPA-8081	90.7			09/25/2014	CAS
Methoxychlor - BS	EPA-8081	89.6			09/25/2014	CAS
Toxaphene - BS	EPA-8081	85.8			09/25/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090067
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R242166 - Soil by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) - BS	EPA-7196	107			10/02/2014	RAL
Chromium (VI) - BSD	EPA-7196	102	5		10/02/2014	RAL

ALS Test Batch ID: R242453 - Soil by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) - BS	EPA-7196	103			09/20/2014	RAL
Chromium (VI) - BSD	EPA-7196	103	0		09/20/2014	RAL

ALS Test Batch ID: R241241 - Soil by EPA-300.0M

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Fluoride - BS	EPA-300.0M	92.0			09/17/2014	GAP
Fluoride - BSD	EPA-300.0M	91.0	1		09/17/2014	GAP
Nitrate as N - BS	EPA-300.0M	104			09/17/2014	GAP
Nitrate as N - BSD	EPA-300.0M	104	0		09/17/2014	GAP
Nitrite as N - BS	EPA-300.0M	93.5			09/17/2014	GAP
Nitrite as N - BSD	EPA-300.0M	87.0	7		09/17/2014	GAP

ALS Test Batch ID: R241162 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7471	106			09/19/2014	RAL
Mercury - BSD	EPA-7471	105	1		09/19/2014	RAL

ALS Test Batch ID: 86039 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-6020	100			09/15/2014	RAL
Arsenic - BSD	EPA-6020	110	9		09/15/2014	RAL
Barium - BS	EPA-6020	102			09/15/2014	RAL
Barium - BSD	EPA-6020	105	2		09/15/2014	RAL
Cadmium - BS	EPA-6020	99.9			09/15/2014	RAL
Cadmium - BSD	EPA-6020	102	2		09/15/2014	RAL
Chromium - BS	EPA-6020	98.9			09/15/2014	RAL
Chromium - BSD	EPA-6020	109	9		09/15/2014	RAL
Iron - BS	EPA-6020	104			09/15/2014	RAL
Iron - BSD	EPA-6020	114	9		09/15/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 10/8/2014 ALS SDG#: EV14090067 WDOE ACCREDITATION: C601
CLIENT CONTACT:	Jeffrey Fellows	
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Lead - BS	EPA-6020	102			09/15/2014	RAL
Lead - BSD	EPA-6020	113	10		09/15/2014	RAL
Manganese - BS	EPA-6020	99.8			09/15/2014	RAL
Manganese - BSD	EPA-6020	109	8		09/15/2014	RAL
Selenium - BS	EPA-6020	102			09/15/2014	RAL
Selenium - BSD	EPA-6020	112	10		09/15/2014	RAL
Silver - BS	EPA-6020	111			09/15/2014	RAL
Silver - BSD	EPA-6020	120	8		09/15/2014	RAL
Sodium - BS	EPA-6020	96.4			09/15/2014	RAL
Sodium - BSD	EPA-6020	97.1	1		09/15/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090067
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

MATRIX SPIKE RESULTS

ALS Test Batch ID: R242445 - Soil
 Parent Sample: MW-100 (13.5-14)-091114

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - MS	EPA-8081	0	0.0505	0.0335		66.3		09/25/2014	CAS
A-BHC - MSD	EPA-8081	0	0.0512	0.0393	16	76.8		09/25/2014	CAS
G-BHC - MS	EPA-8081	0	0.0505	0.0337		66.7		09/25/2014	CAS
G-BHC - MSD	EPA-8081	0	0.0512	0.0393	15	76.8		09/25/2014	CAS
B-BHC - MS	EPA-8081	0	0.0505	0.0346		68.5		09/25/2014	CAS
B-BHC - MSD	EPA-8081	0	0.0512	0.0393	13	76.8		09/25/2014	CAS
Heptachlor - MS	EPA-8081	0	0.0505	0.0335		66.3		09/25/2014	CAS
Heptachlor - MSD	EPA-8081	0	0.0512	0.0388	15	75.8		09/25/2014	CAS
D-BHC - MS	EPA-8081	0	0.0505	0.0375		74.3		09/25/2014	CAS
D-BHC - MSD	EPA-8081	0	0.0512	0.0418	11	81.6		09/25/2014	CAS
Aldrin - MS	EPA-8081	0	0.0505	0.0317		62.8		09/25/2014	CAS
Aldrin - MSD	EPA-8081	0	0.0512	0.0368	15	71.9		09/25/2014	CAS
Heptachlor Epoxide - MS	EPA-8081	0	0.0505	0.0336		66.5		09/25/2014	CAS
Heptachlor Epoxide - MSD	EPA-8081	0	0.0512	0.0379	12	74.0		09/25/2014	CAS
Chlordane - MS	EPA-8081	0	0.0505	0.0339		67.1		09/25/2014	CAS
Chlordane - MSD	EPA-8081	0	0.0512	0.0375	10	73.2		09/25/2014	CAS
Endosulfan I - MS	EPA-8081	0	0.0505	0.0264		52.3		09/25/2014	CAS
Endosulfan I - MSD	EPA-8081	0	0.0512	0.0293	10	57.2		09/25/2014	CAS
4,4'-DDE - MS	EPA-8081	0	0.0505	0.0377		74.7		09/25/2014	CAS
4,4'-DDE - MSD	EPA-8081	0	0.0512	0.0411	9	80.3		09/25/2014	CAS
Dieldrin - MS	EPA-8081	0	0.0505	0.0365		72.3		09/25/2014	CAS
Dieldrin - MSD	EPA-8081	0	0.0512	0.0401	9	78.3		09/25/2014	CAS
Endrin - MS	EPA-8081	0	0.0505	0.0384		76.0		09/25/2014	CAS
Endrin - MSD	EPA-8081	0	0.0512	0.0412	7	80.5		09/25/2014	CAS
4,4'-DDD - MS	EPA-8081	0	0.0505	0.0379		75.0		09/25/2014	CAS
4,4'-DDD - MSD	EPA-8081	0	0.0512	0.0404	6	78.9		09/25/2014	CAS
Endosulfan II - MS	EPA-8081	0	0.0505	0.0314		62.2		09/25/2014	CAS
Endosulfan II - MSD	EPA-8081	0	0.0512	0.0336	7	65.6		09/25/2014	CAS
4,4'-DDT - MS	EPA-8081	0	0.0505	0.0398		78.8		09/25/2014	CAS
4,4'-DDT - MSD	EPA-8081	0	0.0512	0.0414	4	80.9		09/25/2014	CAS
Endrin Aldehyde - MS	EPA-8081	0	0.0505	0.0409		81.0		09/25/2014	CAS
Endrin Aldehyde - MSD	EPA-8081	0	0.0512	0.0462	12	90.2		09/25/2014	CAS
Endosulfan Sulfate - MS	EPA-8081	0	0.0505	0.0406		80.4		09/25/2014	CAS
Endosulfan Sulfate - MSD	EPA-8081	0	0.0512	0.0431	6	84.2		09/25/2014	CAS
Methoxychlor - MS	EPA-8081	0	0.0505	0.0419		83.0		09/25/2014	CAS
Methoxychlor - MSD	EPA-8081	0	0.0512	0.0425	1	83.0		09/25/2014	CAS
Toxaphene - MS	EPA-8081	0	0.252	0.218		86.5		09/25/2014	CAS
Toxaphene - MSD	EPA-8081	0	0.256	0.225	3	87.9		09/25/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/8/2014
130 - 2nd Ave. S. ALS SDG#: EV14090067
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

MATRIX SPIKE RESULTS

ALS Test Batch ID: R242451 - Soil
Parent Sample: MW-109 (12.5-13)-091114

Table with 10 columns: SPIKED COMPOUND, METHOD, PARENT SAMPLE RESULT, SPIKE ADDED, RESULT, RPD, %REC, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows include PCB-1016 - MS, PCB-1016 - MSD, PCB-1260 - MS, and PCB-1260 - MSD.

APPROVED BY

Handwritten signature of Paul Bagum

Laboratory Director

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV14090067

Project: Yakima Landfill / #1148008. 010. 014

Received Date: 9/12/14 Received Time: 8:10 By: SN

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express 1st overnight

	Yes	No	N/A
Were custody seals on outside of sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1</u> Where? <u>outside cooler</u>			
Custody seal date: <u>9/11/14</u> Seal name: <u>Landau</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Received per 5035
low kits

Were VOA vials checked for absence of air bubbles?
Bubbles present in sample #: _____

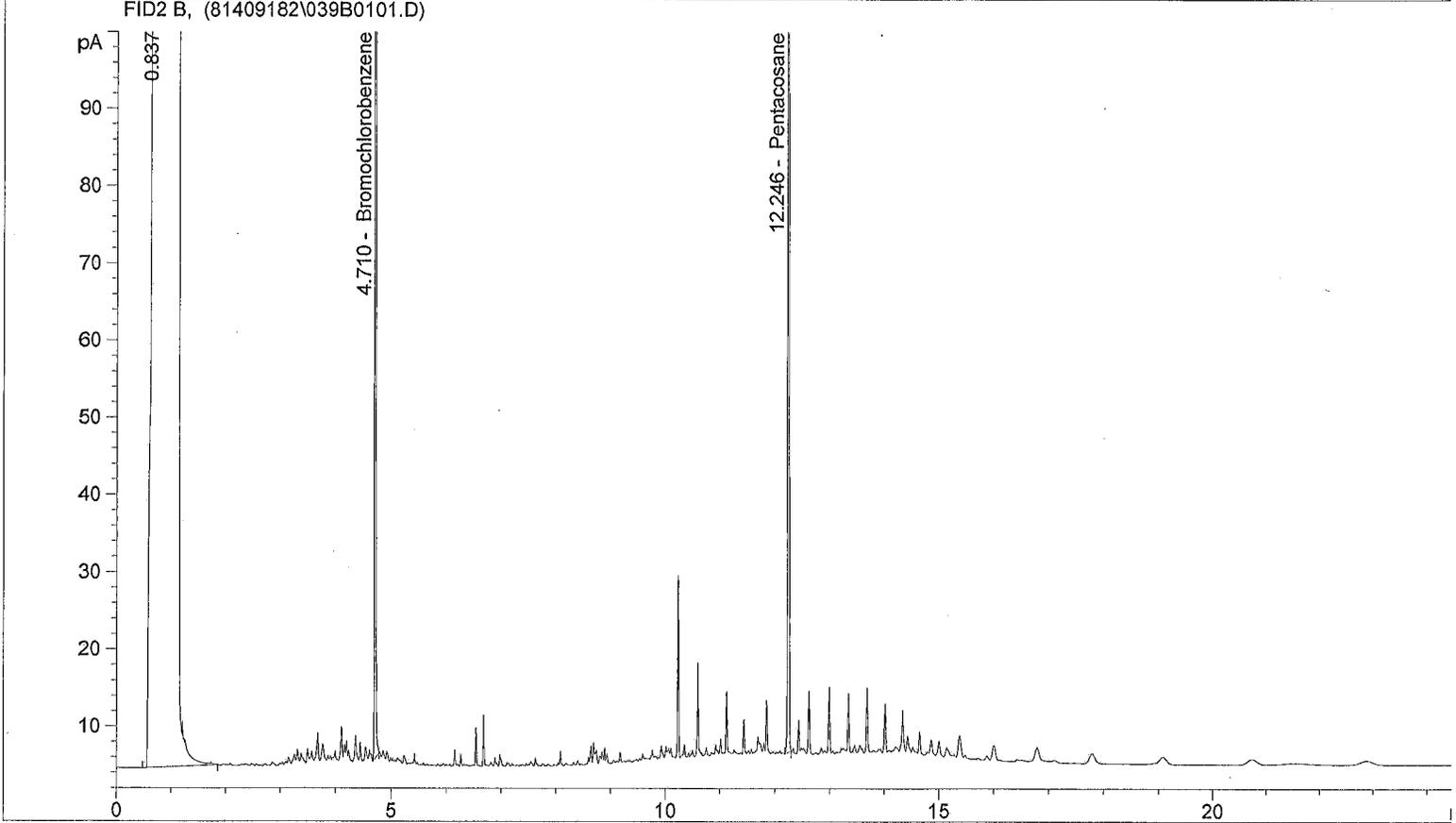
Temperature of cooler upon receipt: 1.4° on ice Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

Sample Name: EV14090067-01 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.710	FID2 B,	Bromochlorobenzene	516.317	47.744
12.246		Pentacosane	260.623	10.324

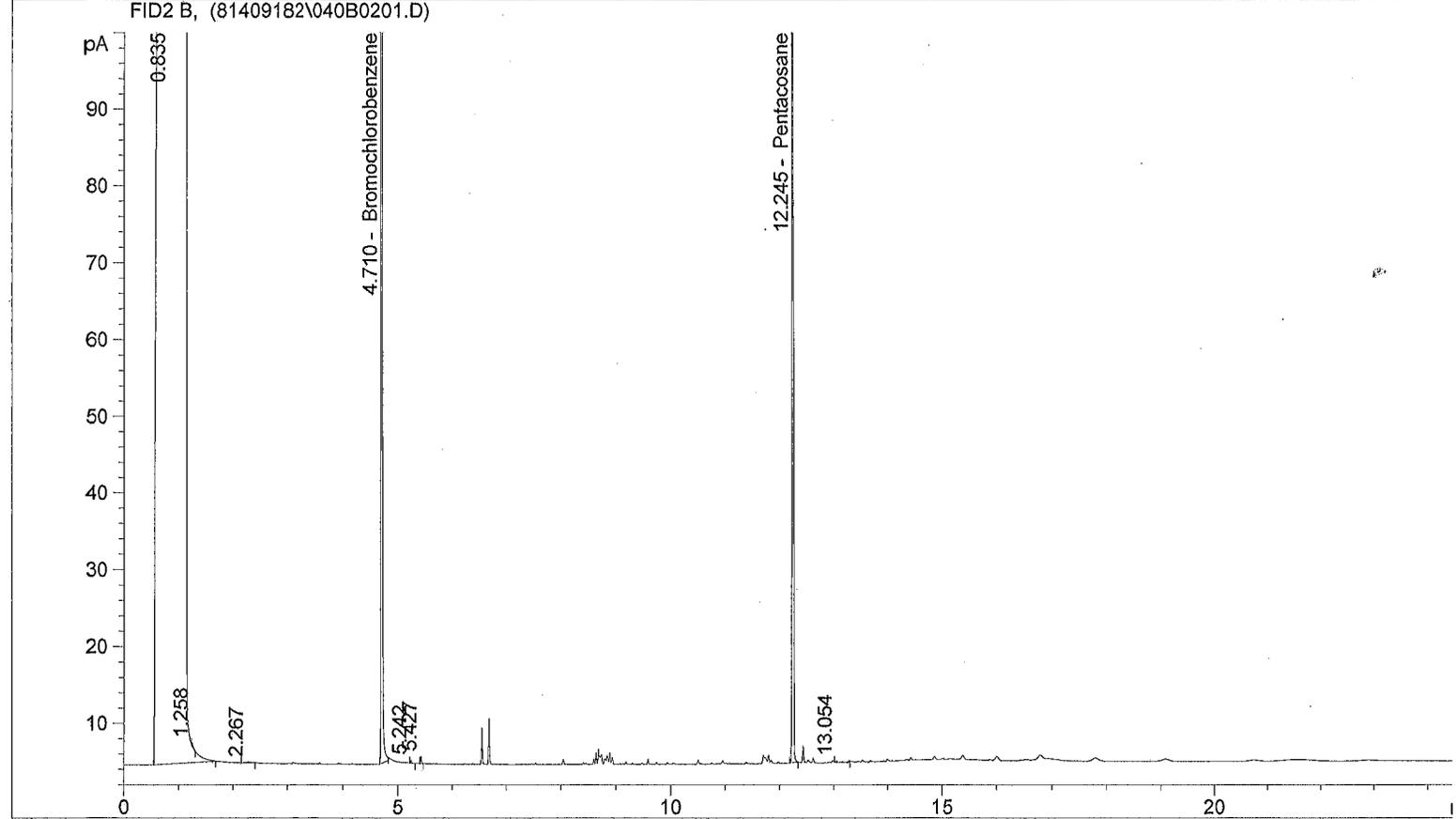
95%
103%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

(Handwritten signature)

09.19.14 es

Sample Name: EV14090067-02 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.710	FID2 B,	Bromochlorobenzene	522.120	48.280
12.245		Pentacosane	248.589	9.847

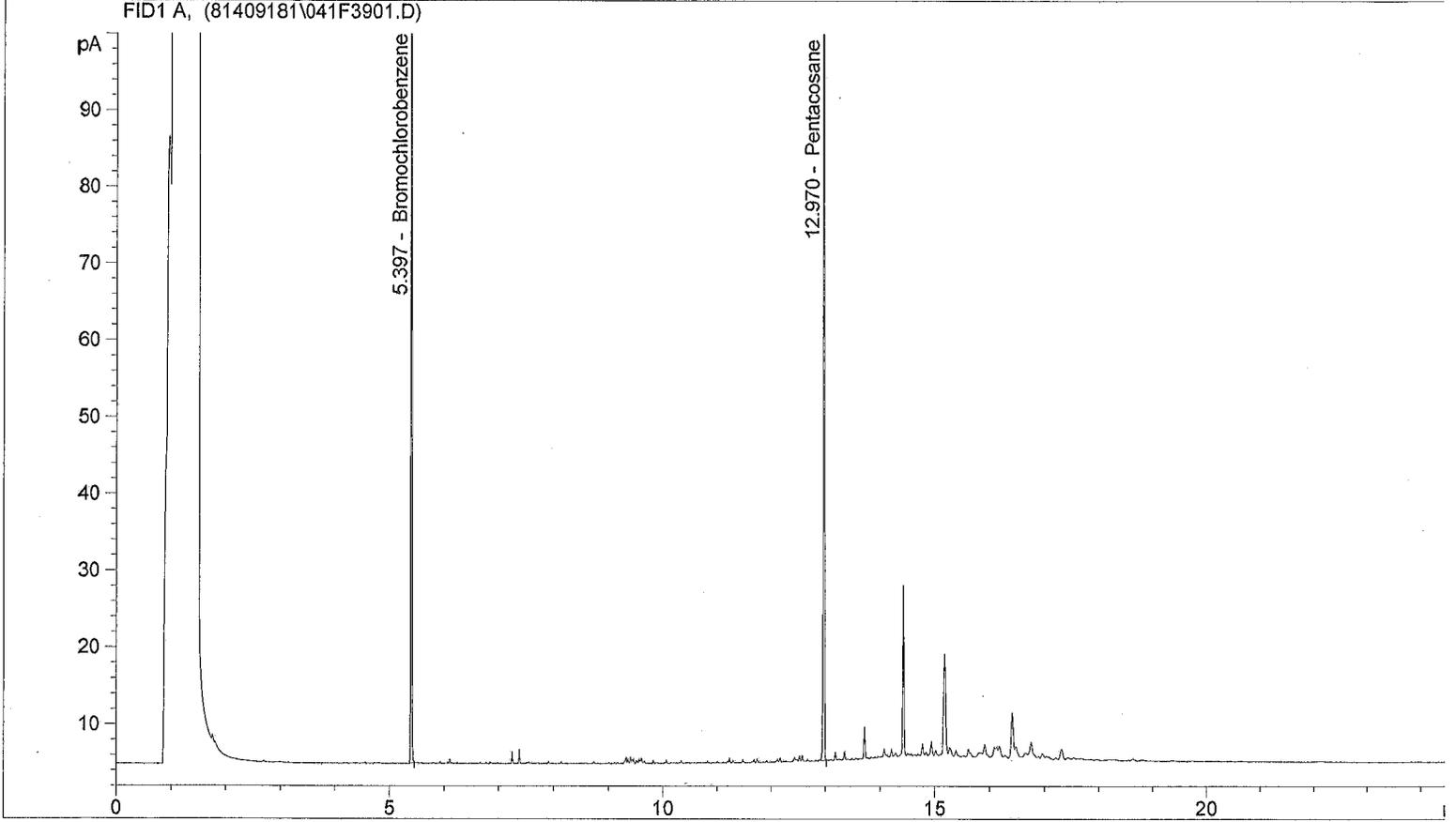
97%
98%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

CS
9/19/14

09.19.14

Sample Name: EV14090067-03 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.397	FID1 A,	Bromochlorobenzene	379.520	40.017
12.970		Pentacosane	178.374	8.568

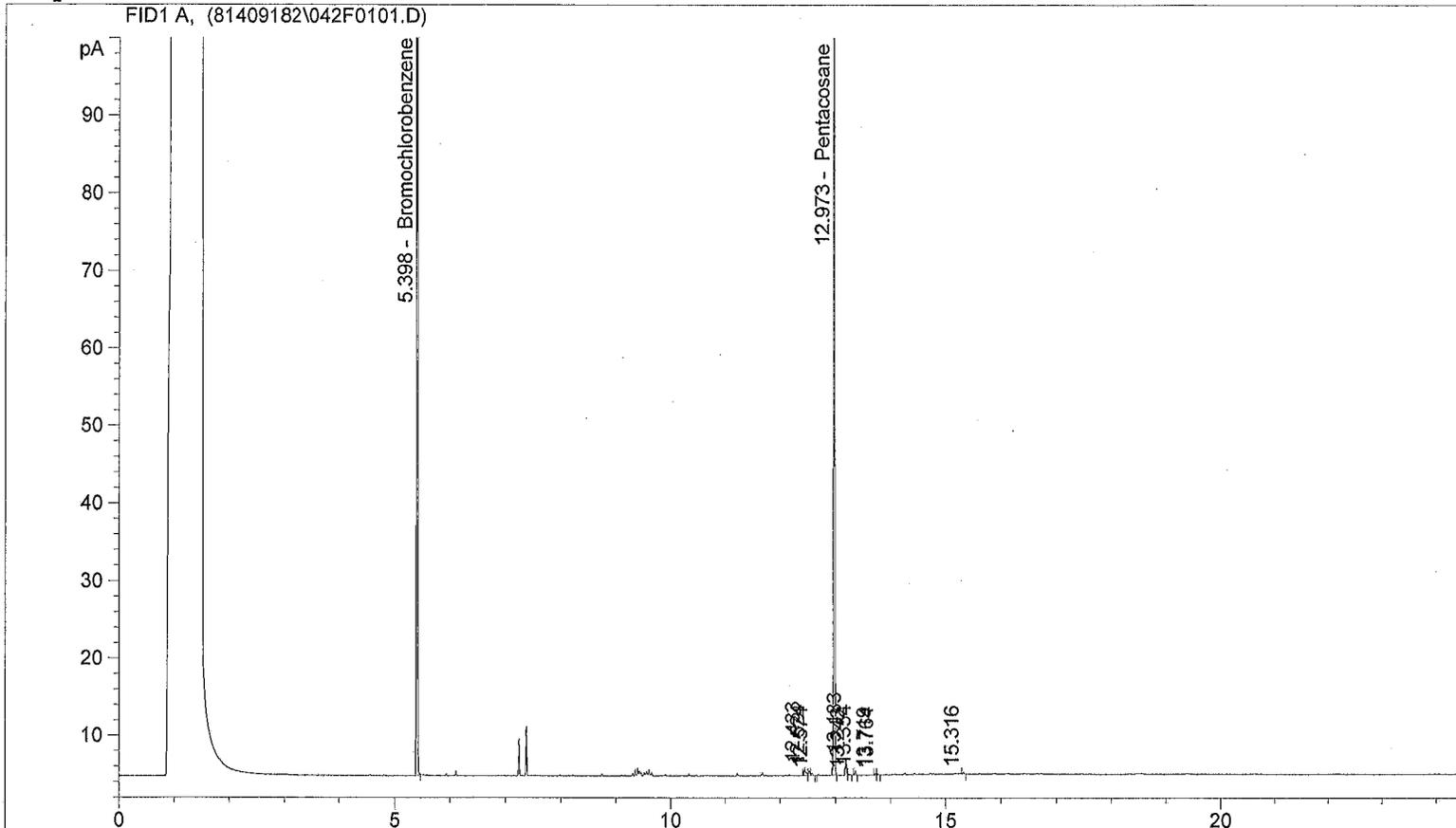
80%
86%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

CV
 a/a/y

09.19.14

Sample Name: EV14090067-04 HCID ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.398	FID1 A,	Bromochlorobenzene	372.560	39.284
12.973		Pentacosane	177.015	8.503

78%
85%

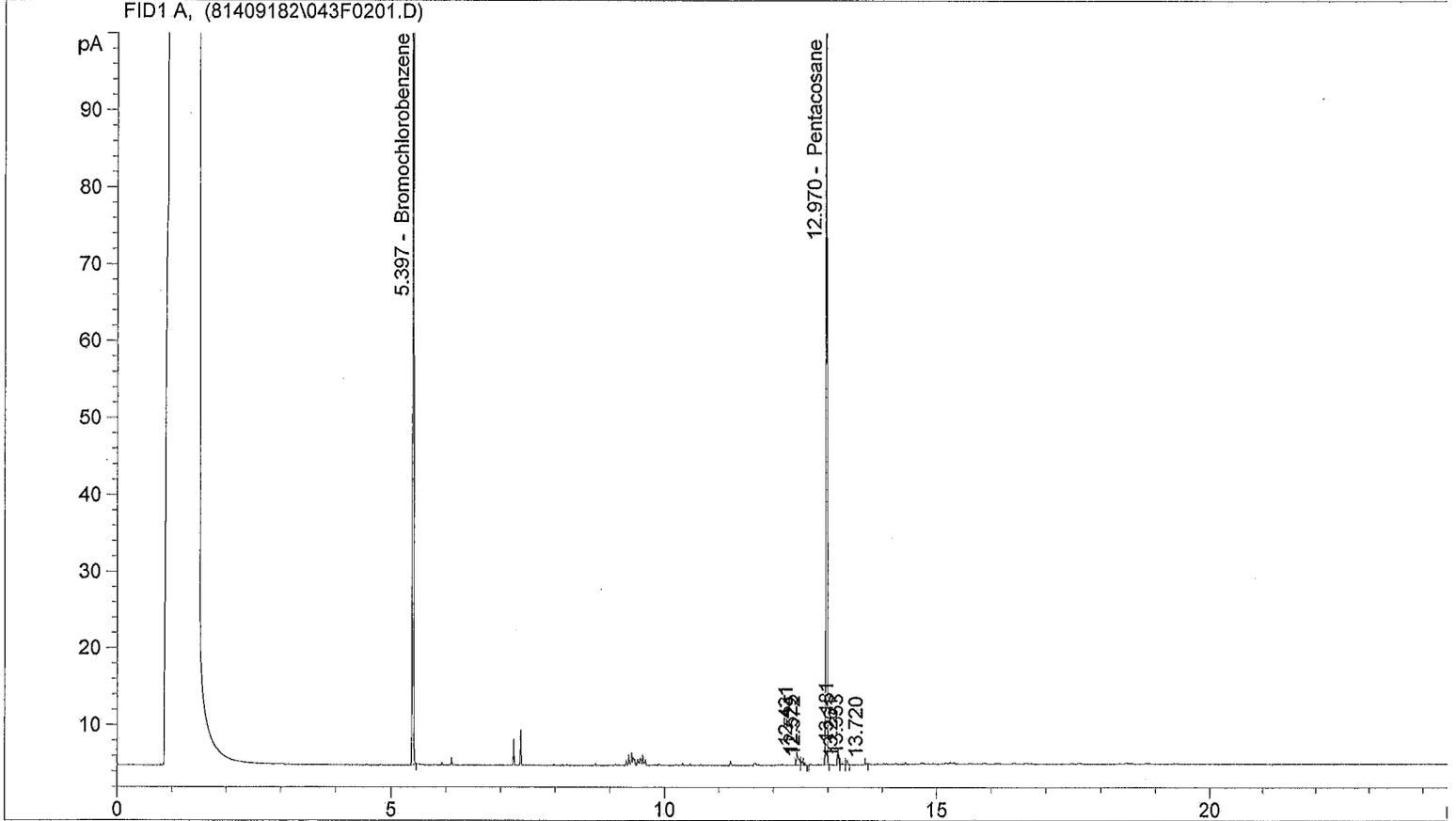
G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

CA
 1/19/14

09.19.14/8

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\043F0201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDS.M
 Injection Date & Time: 9/19/2014 4:29:52 PM 9/19/2014 4:29:52 PM
 Report Creation: 9/19/2014 4:56:05 PM

Sample Name: EV14090067-04DUP HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.397	FID1 A,	Bromochlorobenzene	380.277	40.097
12.970		Pentacosane	181.235	8.705

80%
87%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

09.19.14 EBS



August 10, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On September 12th, 4 samples were received by our laboratory and assigned our laboratory project number EV14090067. The project was identified as your Yakima Landfill / #1148008.010.014. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report is being re-issued with lowered reporting limits for Chloroform. No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS JOB#: EV14090067
Edmonds, WA 98020 ALS SAMPLE#: EV14090067-01
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/12/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/10/2014 9:30:00 AM
CLIENT SAMPLE ID MW-106 (13.5-14.5)-091014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	09/18/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS JOB#: EV14090067
Edmonds, WA 98020 ALS SAMPLE#: EV14090067-02
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/12/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/11/2014 10:30:00 AM
CLIENT SAMPLE ID MW-100 (13.5-14)-091114 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	09/18/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS JOB#: EV14090067
Edmonds, WA 98020 ALS SAMPLE#: EV14090067-03
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/12/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/11/2014 2:50:00 PM
CLIENT SAMPLE ID MW-109 (5-5.5)-091114 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	09/18/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS JOB#: EV14090067
Edmonds, WA 98020 ALS SAMPLE#: EV14090067-04
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/12/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/11/2014 3:00:00 PM
CLIENT SAMPLE ID MW-109 (12.5-13)-091114 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	09/18/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS SDG#: EV14090067
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091814S - Batch 86175 - Soil by EPA-8260

Table with 9 columns: ANALYTE, METHOD, RESULTS, QUAL, UNITS, REPORTING LIMITS, ANALYSIS DATE, ANALYSIS BY. Row 1: Chloroform, EPA-8260, U, UG/KG, 8.0, 09/18/2014, DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS SDG#: EV14090067
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 86175 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	112			09/18/2014	DLC
1,1-Dichloroethene - BSD	EPA-8260	98.2	13		09/18/2014	DLC
Benzene - BS	EPA-8260	102			09/18/2014	DLC
Benzene - BSD	EPA-8260	101	2		09/18/2014	DLC
Toluene - BS	EPA-8260	97.7			09/18/2014	DLC
Toluene - BSD	EPA-8260	95.5	2		09/18/2014	DLC
Chlorobenzene - BS	EPA-8260	94.8			09/18/2014	DLC
Chlorobenzene - BSD	EPA-8260	95.2	0		09/18/2014	DLC

APPROVED BY

Laboratory Director



September 30, 2014

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On September 16th, 5 samples were received by our laboratory and assigned our laboratory project number EV14090080. The project was identified as your Yakima Landfill / #1148008.010.014. The sample identification and requested analyses are outlined on the attached chain of custody record.

TDS was performed outside of the recommended 7 day hold time. No other abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090080
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090080-01
CLIENT SAMPLE ID:	MW-9A-091514	DATE RECEIVED:	09/16/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/16/2014	RAL
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/16/2014	RAL
Total Dissolved Solids	SM2540C	170 H	5.0	1	MG/L	09/30/2014	DLC
Chloride	EPA-300.0	8.8	0.092	1	MG/L	09/16/2014	GAP
Fluoride	EPA-300.0	0.41	0.16	1	MG/L	09/16/2014	GAP
Nitrate as N	EPA-300.0	3.3	0.034	1	MG/L	09/16/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/16/2014	GAP
Sulfate	EPA-300.0	10	0.26	1	MG/L	09/16/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090080
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090080-02
CLIENT SAMPLE ID:	MW-18-091514	DATE RECEIVED:	09/16/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/16/2014	RAL
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/16/2014	RAL
Total Dissolved Solids	SM2540C	310 H	5.0	1	MG/L	09/30/2014	DLC
Chloride	EPA-300.0	19	0.46	5	MG/L	09/16/2014	GAP
Fluoride	EPA-300.0	0.19	0.16	1	MG/L	09/16/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/16/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/16/2014	GAP
Sulfate	EPA-300.0	0.36	0.26	1	MG/L	09/16/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090080
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090080-03
CLIENT SAMPLE ID:	MW-11-091514	DATE RECEIVED:	09/16/2014
		COLLECTION DATE:	9/15/2014 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/16/2014	RAL
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/16/2014	RAL
Total Dissolved Solids	SM2540C	210 H	5.0	1	MG/L	09/30/2014	DLC
Chloride	EPA-300.0	16	0.092	1	MG/L	09/16/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	09/16/2014	GAP
Nitrate as N	EPA-300.0	0.045	0.034	1	MG/L	09/16/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/16/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	09/16/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090080
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090080-04
CLIENT SAMPLE ID	MW-105-091514	DATE RECEIVED:	09/16/2014
		COLLECTION DATE:	9/15/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/16/2014	RAL
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/16/2014	RAL
Total Dissolved Solids	SM2540C	230 H	5.0	1	MG/L	09/30/2014	DLC
Chloride	EPA-300.0	18	0.46	5	MG/L	09/16/2014	GAP
Fluoride	EPA-300.0	0.22	0.16	1	MG/L	09/16/2014	GAP
Nitrate as N	EPA-300.0	0.081	0.034	1	MG/L	09/16/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/16/2014	GAP
Sulfate	EPA-300.0	2.5	0.26	1	MG/L	09/16/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	9/30/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090080
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090080-05
CLIENT SAMPLE ID	MW-12-091514	DATE RECEIVED:	09/16/2014
		COLLECTION DATE:	9/15/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/16/2014	RAL
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/16/2014	RAL
Total Dissolved Solids	SM2540C	370 H	5.0	1	MG/L	09/30/2014	DLC
Chloride	EPA-300.0	18	0.092	1	MG/L	09/16/2014	GAP
Fluoride	EPA-300.0	0.44	0.16	1	MG/L	09/16/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/16/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/16/2014	GAP
Sulfate	EPA-300.0	18	0.26	1	MG/L	09/16/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 9/30/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090080
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MBLK-9162014 - Batch R241902 - Water by EPA-7196

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/16/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9162014 - Batch R241903 - Water by EPA-7196

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/16/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9302014 - Batch R241934 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	09/30/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-241596 - Batch R241596 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	09/16/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	09/16/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/16/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/16/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	09/16/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 9/30/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090080
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R241902 - Water by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) - BS	EPA-7196	100			09/16/2014	RAL
Chromium (VI) - BSD	EPA-7196	97.0	3		09/16/2014	RAL

ALS Test Batch ID: R241903 - Water by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) (Dissolved) - BS	EPA-7196	100			09/16/2014	RAL
Chromium (VI) (Dissolved) - BSD	EPA-7196	97.0	3		09/16/2014	RAL

ALS Test Batch ID: R241934 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	98.0			09/30/2014	DLC

ALS Test Batch ID: R241596 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	93.5			09/16/2014	GAP
Chloride - BSD	EPA-300.0	93.0	1		09/16/2014	GAP
Fluoride - BS	EPA-300.0	98.0			09/16/2014	GAP
Fluoride - BSD	EPA-300.0	98.5	1		09/16/2014	GAP
Nitrate as N - BS	EPA-300.0	108			09/16/2014	GAP
Nitrate as N - BSD	EPA-300.0	104	4		09/16/2014	GAP
Nitrite as N - BS	EPA-300.0	95.0			09/16/2014	GAP
Nitrite as N - BSD	EPA-300.0	95.5	1		09/16/2014	GAP
Sulfate - BS	EPA-300.0	114			09/16/2014	GAP
Sulfate - BSD	EPA-300.0	105	9		09/16/2014	GAP

APPROVED BY

Laboratory Director

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV14090080

Project: Closed Landfill / # 1148008

Received Date: 9/16/14 Received Time: 8:35 am By: SM

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express 1st Overnight

	Yes	No	N/A
Were custody seals on outside of sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1</u> Where? <u>outside top cooler</u>			
Custody seal date: <u>9/15/14</u> Seal name: <u>Landau</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: _____

Temperature of cooler upon receipt: 3.8° on ice Cold Cool Ambient N/A

Explain any discrepancies: No sample times listed on coc for MW-9a and MW-12. I took times off of containers and added to coc.

Was client contacted? Who was called? By whom? Date:

Outcome of call: _____



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080
-

Date 9/15/14
Page 1 of 1

Chain-of-Custody Record

Project Name <u>CLOSED LANDFILL</u> Project No. <u>1148008</u>					Testing Parameters										Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/>					
Project Location/Event <u>9/12/14 GW SAMPLING / YAKIMA, WA</u>					<div style="transform: rotate(-45deg); font-size: small;"> 11 Hexylent (r 70% Dioxin) * Conventional (EPA 300) / HDS </div>															
Sampler's Name <u>MATT MORONEY, STEPHANIE RENANDO</u>																				
Project Contact <u>J. FELLOWES</u>																				
Send Results To <u>J. FELLOWES, A. HALLORSEN</u>																				
Sample I.D.	Date	Time	Matrix	No. of Containers											Observations/Comments					
MW-9A-091514	9/15/14	1215	AQ	3	X	X														X Allow water samples to settle, collect aliquot from clear portion
MW-18-091514	9/15/14	1215	AQ	3	X	X														X NWTPH-Dx - run acid wash/silica gel cleanup
MW-11-091514	9/15/14	1330	AQ	3	X	X														
MW-10S-091514	9/15/14	1500	AQ	3	X	X														
MW-12-091514	9/15/14	1430	AQ	3	X	X														___ run samples standardized to _____ product ___ Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): ___ non-preserved ___ preserved w/methanol ___ preserved w/sodium bisulfate ___ Freeze upon receipt ___ Dissolved metal water samples field filtered Other: <u>x One bottle for total one for dissolved. Dissolved bottle is marked field filtered.</u> <u>Conventional: fluoride, nitrate, sulfate, chloride, nitrite MSM 9/23/14</u>
Special Shipment/Handling or Storage Requirements					Method of Shipment <u>Delivery on Ice</u>															
Relinquished by <u>Matt Moroney</u> Signature Printed Name <u>MATT MORONEY</u> Company <u>LANDAU ASSOCIATES</u> Date <u>9/15/14</u> Time <u>1530</u>					Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____					Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____					Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____					



October 1, 2014

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On September 17th, 11 samples were received by our laboratory and assigned our laboratory project number EV14090091. The project was identified as your Yakima Landfill / #1148008.010.014. The sample identification and requested analyses are outlined on the attached chain of custody record.

MW-3, MW-7, MW-DUP1, and MW-DUP2 were received without sufficient remaining hold time for Chromium(VI) analysis within the 24 hour hold time. No other abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090091
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090091-01
CLIENT SAMPLE ID:	MW-3-09162014	DATE RECEIVED:	09/17/2014
		COLLECTION DATE:	9/16/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI)	EPA-7196	ND- H	10	1	ug/L	09/17/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	ND- H	10	1	ug/L	09/17/2014	GAP
Total Dissolved Solids	SM2540C	170	5.0	1	MG/L	09/19/2014	DLC
Chloride	EPA-300.0	9.7	0.092	1	MG/L	09/17/2014	GAP
Fluoride	EPA-300.0	0.33	0.16	1	MG/L	09/17/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/17/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/17/2014	GAP
Sulfate	EPA-300.0	9.7	0.26	1	MG/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090091
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090091-02
CLIENT SAMPLE ID:	MW-102-09162014	DATE RECEIVED:	09/17/2014
		COLLECTION DATE:	9/16/2014 11:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Total Dissolved Solids	SM2540C	190	5.0	1	MG/L	09/19/2014	DLC
Chloride	EPA-300.0	11	0.092	1	MG/L	09/17/2014	GAP
Fluoride	EPA-300.0	0.26	0.16	1	MG/L	09/17/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/17/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/17/2014	GAP
Sulfate	EPA-300.0	13	0.26	1	MG/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090091
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090091-03
CLIENT SAMPLE ID:	MW-103-09162014	DATE RECEIVED:	09/17/2014
		COLLECTION DATE:	9/16/2014 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Total Dissolved Solids	SM2540C	230	5.0	1	MG/L	09/19/2014	DLC
Chloride	EPA-300.0	19	0.092	1	MG/L	09/17/2014	GAP
Fluoride	EPA-300.0	0.24	0.16	1	MG/L	09/17/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/17/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/17/2014	GAP
Sulfate	EPA-300.0	0.30	0.26	1	MG/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090091
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090091-04
CLIENT SAMPLE ID:	MW-104-09162014	DATE RECEIVED:	09/17/2014
		COLLECTION DATE:	9/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Total Dissolved Solids	SM2540C	220	5.0	1	MG/L	09/19/2014	DLC
Chloride	EPA-300.0	18	0.092	1	MG/L	09/17/2014	GAP
Fluoride	EPA-300.0	0.19	0.16	1	MG/L	09/17/2014	GAP
Nitrate as N	EPA-300.0	0.036	0.034	1	MG/L	09/17/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/17/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090091
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090091-05
CLIENT SAMPLE ID	MW-8-09162014	DATE RECEIVED:	09/17/2014
		COLLECTION DATE:	9/16/2014 8:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	ND- H	10	1	ug/L	09/17/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	ND- H	10	1	ug/L	09/17/2014	GAP
Total Dissolved Solids	SM2540C	230	5.0	1	MG/L	09/19/2014	DLC
Chloride	EPA-300.0	18	0.46	5	MG/L	09/18/2014	GAP
Fluoride	EPA-300.0	0.23	0.16	1	MG/L	09/17/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/17/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/17/2014	GAP
Sulfate	EPA-300.0	0.41	0.26	1	MG/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090091
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090091-06
CLIENT SAMPLE ID:	MW-7-09162014	DATE RECEIVED:	09/17/2014
		COLLECTION DATE:	9/16/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Total Dissolved Solids	SM2540C	130	5.0	1	MG/L	09/19/2014	DLC
Chloride	EPA-300.0	12	0.092	1	MG/L	09/17/2014	GAP
Fluoride	EPA-300.0	0.25	0.16	1	MG/L	09/17/2014	GAP
Nitrate as N	EPA-300.0	0.39	0.034	1	MG/L	09/17/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/17/2014	GAP
Sulfate	EPA-300.0	1.8	0.26	1	MG/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090091
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090091-07
CLIENT SAMPLE ID:	MW-106-09162014	DATE RECEIVED:	09/17/2014
		COLLECTION DATE:	9/16/2014 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Total Dissolved Solids	SM2540C	320	5.0	1	MG/L	09/20/2014	DLC
Chloride	EPA-300.0	18	0.092	1	MG/L	09/17/2014	GAP
Fluoride	EPA-300.0	0.51	0.16	1	MG/L	09/17/2014	GAP
Nitrate as N	EPA-300.0	0.043	0.034	1	MG/L	09/17/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/17/2014	GAP
Sulfate	EPA-300.0	20	0.26	1	MG/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090091
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090091-08
CLIENT SAMPLE ID:	MW-109-09162014	DATE RECEIVED:	09/17/2014
		COLLECTION DATE:	9/16/2014 1:08:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Total Dissolved Solids	SM2540C	200	5.0	1	MG/L	09/20/2014	DLC
Chloride	EPA-300.0	10	0.092	1	MG/L	09/17/2014	GAP
Fluoride	EPA-300.0	0.28	0.16	1	MG/L	09/17/2014	GAP
Nitrate as N	EPA-300.0	0.94	0.034	1	MG/L	09/17/2014	GAP
Nitrite as N	EPA-300.0	0.14	0.043	1	MG/L	09/17/2014	GAP
Sulfate	EPA-300.0	13	0.26	1	MG/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090091
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090091-09
CLIENT SAMPLE ID:	MW-100-09162014	DATE RECEIVED:	09/17/2014
		COLLECTION DATE:	9/16/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP
Total Dissolved Solids	SM2540C	230	5.0	1	MG/L	09/20/2014	DLC
Chloride	EPA-300.0	12	0.092	1	MG/L	09/17/2014	GAP
Fluoride	EPA-300.0	0.37	0.16	1	MG/L	09/17/2014	GAP
Nitrate as N	EPA-300.0	1.1	0.034	1	MG/L	09/17/2014	GAP
Nitrite as N	EPA-300.0	0.60	0.043	1	MG/L	09/17/2014	GAP
Sulfate	EPA-300.0	14	0.26	1	MG/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090091
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090091-10
CLIENT SAMPLE ID:	MW-DUP-1-09162014	DATE RECEIVED:	09/17/2014
		COLLECTION DATE:	9/16/2014 9:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	ND- H	10	1	ug/L	09/17/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	ND- H	10	1	ug/L	09/17/2014	GAP
Total Dissolved Solids	SM2540C	180	5.0	1	MG/L	09/20/2014	DLC
Chloride	EPA-300.0	9.2	0.092	1	MG/L	09/17/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	09/17/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/17/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/17/2014	GAP
Sulfate	EPA-300.0	9.5	0.26	1	MG/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090091
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090091-11
CLIENT SAMPLE ID:	MW-DUP-2-09162014	DATE RECEIVED:	09/17/2014
		COLLECTION DATE:	9/16/2014 7:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (VI)	EPA-7196	ND- H	10	1	ug/L	09/17/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	ND- H	10	1	ug/L	09/17/2014	GAP
Total Dissolved Solids	SM2540C	320	5.0	1	MG/L	09/20/2014	DLC
Chloride	EPA-300.0	18	0.092	1	MG/L	09/17/2014	GAP
Fluoride	EPA-300.0	0.37	0.16	1	MG/L	09/17/2014	GAP
Nitrate as N	EPA-300.0	0.12	0.034	1	MG/L	09/17/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/17/2014	GAP
Sulfate	EPA-300.0	20	0.26	1	MG/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/1/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090091
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MBLK-9172014 - Batch R241967 - Water by EPA-7196

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9172014 - Batch R241969 - Water by EPA-7196

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9192014 - Batch R241305 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	09/19/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9202014 - Batch R241344 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	09/20/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9172014 - Batch R241970 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	09/17/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	09/17/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/17/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/17/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	09/17/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/1/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090091
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R241967 - Water by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) - BS	EPA-7196	101			09/17/2014	GAP
Chromium (VI) - BSD	EPA-7196	100	1		09/17/2014	GAP

ALS Test Batch ID: R241969 - Water by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) (Dissolved) - BS	EPA-7196	101			09/17/2014	GAP
Chromium (VI) (Dissolved) - BSD	EPA-7196	100	1		09/17/2014	GAP

ALS Test Batch ID: R241305 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	102			09/19/2014	DLC

ALS Test Batch ID: R241344 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	100			09/20/2014	DLC

ALS Test Batch ID: R241970 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	92.0			09/17/2014	GAP
Chloride - BSD	EPA-300.0	90.0	2		09/17/2014	GAP
Fluoride - BS	EPA-300.0	92.0			09/17/2014	GAP
Fluoride - BSD	EPA-300.0	95.0	3		09/17/2014	GAP
Nitrate as N - BS	EPA-300.0	106			09/17/2014	GAP
Nitrate as N - BSD	EPA-300.0	101	5		09/17/2014	GAP
Nitrite as N - BS	EPA-300.0	90.0			09/17/2014	GAP
Nitrite as N - BSD	EPA-300.0	93.0	3		09/17/2014	GAP
Sulfate - BS	EPA-300.0	98.0			09/17/2014	GAP
Sulfate - BSD	EPA-300.0	105	7		09/17/2014	GAP

APPROVED BY


 Laboratory Director

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV14090091

Project: Closed Landfill / # 1148008.010.014

Received Date: 9/17/14 Received Time: 8:15 am By: SMR/RB

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express First Overnight

	Yes	No	N/A
Were custody seals on outside of sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1</u> Where? <u>outside cooler</u>			
Custody seal date: <u>9/16/14</u> Seal name: <u>Landau</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

Sample Number	Reagent	Analyte
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: _____

Temperature of cooler upon receipt: 3.6°C on ice Cold Cool Ambient N/A

Explain any discrepancies: MW-3, MW-8, MW-Dup-1 and MW-Dup-2 Hexchromes received outside of hold in time for processing.

Was client contacted? No Who was called? — By whom? — Date: —

Outcome of call: _____



October 16, 2014

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On September 18th, 27 samples were received by our laboratory and assigned our laboratory project number EV14090107. The project was identified as your Yakima Landfill / #1148008.010.014. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-01
CLIENT SAMPLE ID	MW-6-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 12:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/26/2014	GAP
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/26/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/26/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Chloride	EPA-300.0	20	0.46	5	MG/L	09/22/2014	GAP
Fluoride	EPA-300.0	0.17	0.16	1	MG/L	09/22/2014	GAP
Nitrate as N	EPA-300.0	0.36	0.034	1	MG/L	09/22/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/22/2014	GAP
Sulfate	EPA-300.0	2.0	0.26	1	MG/L	09/22/2014	GAP
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	1.3	1.0	1	ug/L	09/26/2014	RAL
Barium	EPA-200.8	44	1.0	1	ug/L	09/26/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Calcium	EPA-200.8	33000	100	1	ug/L	09/26/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/26/2014	RAL
Iron	EPA-200.8	2800	50	1	ug/L	09/26/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Magnesium	EPA-200.8	12000	50	1	ug/L	09/26/2014	RAL
Manganese	EPA-200.8	1300	2.0	1	ug/L	09/26/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-01
CLIENT SAMPLE ID	MW-6-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 12:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/26/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Sodium	EPA-200.8	14000	50	1	ug/L	09/26/2014	RAL
Arsenic (Dissolved)	EPA-200.8	1.3	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	44	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	32000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	3100	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	1300	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	15000	50	1	ug/L	09/29/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	87.0	09/20/2014	EBS
C25	NWTPH-HCID	89.6	09/20/2014	EBS
C25 (conc)	NWTPH-HCID	93.8	09/20/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	107	09/26/2014	GAP
Terphenyl-d14	EPA-8270 SIM	108	09/26/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-02
CLIENT SAMPLE ID	MW-7-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/18/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-02
CLIENT SAMPLE ID	MW-7-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/18/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/18/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	0.17	0.10	1	ug/L	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-02
CLIENT SAMPLE ID	MW-7-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-02
CLIENT SAMPLE ID	MW-7-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-02
CLIENT SAMPLE ID	MW-7-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	09/29/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	1.7	1.0	1	ug/L	09/26/2014	RAL
Barium	EPA-200.8	30	1.0	1	ug/L	09/26/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Calcium	EPA-200.8	23000	100	1	ug/L	09/26/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/26/2014	RAL
Iron	EPA-200.8	7100	50	1	ug/L	09/26/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Magnesium	EPA-200.8	8000	50	1	ug/L	09/26/2014	RAL
Manganese	EPA-200.8	1700	2.0	1	ug/L	09/26/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-02
CLIENT SAMPLE ID	MW-7-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/26/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Sodium	EPA-200.8	13000	50	1	ug/L	09/26/2014	RAL
Arsenic (Dissolved)	EPA-200.8	1.3	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	28	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	23000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	6800	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	7900	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	1600	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	13000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	140	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	140	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	2.8	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	3.2	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	88.7	09/20/2014	EBS
C25	NWTPH-HCID	93.8	09/20/2014	EBS
C25 (conc)	NWTPH-HCID	90.2	09/20/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	99.8	09/18/2014	DLC
Toluene-d8	EPA-8260	98.0	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	95.1	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	71.6	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	104	09/23/2014	GAP
2-Fluorophenol	EPA-8270	70.6	09/22/2014	GAP
Phenol-d5	EPA-8270	30.3	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	88.8	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	87.3	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	108	09/22/2014	GAP
Terphenyl-d14	EPA-8270	119	09/22/2014	GAP
DCB	EPA-8082	98.0	10/06/2014	CAS
TCMX	EPA-8081	73.0	09/29/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-02
CLIENT SAMPLE ID	MW-7-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	85.0	09/29/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-03
CLIENT SAMPLE ID	MW-8-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 8:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/18/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-03
CLIENT SAMPLE ID	MW-8-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 8:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/18/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/18/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-03
CLIENT SAMPLE ID	MW-8-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 8:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-03
CLIENT SAMPLE ID	MW-8-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 8:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	10	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-03
CLIENT SAMPLE ID	MW-8-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 8:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.022	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.017	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.047	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.028	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.012	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.017	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Toxaphene	EPA-8081	U	0.51	1	ug/L	09/29/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	4.8	1.0	1	ug/L	09/26/2014	RAL
Barium	EPA-200.8	98	1.0	1	ug/L	09/26/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Calcium	EPA-200.8	32000	100	1	ug/L	09/26/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/26/2014	RAL
Iron	EPA-200.8	17000	50	1	ug/L	09/26/2014	RAL
Lead	EPA-200.8	2.1	1.0	1	ug/L	09/26/2014	RAL
Magnesium	EPA-200.8	14000	50	1	ug/L	09/26/2014	RAL
Manganese	EPA-200.8	2000	2.0	1	ug/L	09/26/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-03
CLIENT SAMPLE ID	MW-8-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 8:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/26/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Sodium	EPA-200.8	26000	50	1	ug/L	09/26/2014	RAL
Arsenic (Dissolved)	EPA-200.8	3.7	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	77	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	31000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	14000	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	1900	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	25000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	250	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	250	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	8.4	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	8.0	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	91.1	09/20/2014	EBS
C25	NWTPH-HCID	95.8	09/20/2014	EBS
C25 (conc)	NWTPH-HCID	101	09/20/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	99.7	09/18/2014	DLC
Toluene-d8	EPA-8260	101	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	99.4	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	94.7	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	86.5	09/23/2014	GAP
2-Fluorophenol	EPA-8270	69.0	09/22/2014	GAP
Phenol-d5	EPA-8270	30.3	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	84.8	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	81.1	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	100	09/22/2014	GAP
Terphenyl-d14	EPA-8270	106	09/22/2014	GAP
DCB	EPA-8082	105	10/06/2014	CAS
TCMX	EPA-8081	64.0	09/29/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
130 - 2nd Ave. S. ALS JOB#: EV14090107
Edmonds, WA 98020 ALS SAMPLE#: EV14090107-03
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/18/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/16/2014 8:15:00 AM
CLIENT SAMPLE ID MW-8-09162014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	72.0	09/29/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-04
CLIENT SAMPLE ID	MW-9A-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/18/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroform	EPA-8260	1.7	0.10	1	ug/L	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-04
CLIENT SAMPLE ID	MW-9A-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/18/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/18/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-04
CLIENT SAMPLE ID	MW-9A-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-04
CLIENT SAMPLE ID	MW-9A-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-04
CLIENT SAMPLE ID	MW-9A-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.01	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
G-BHC	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
B-BHC	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Heptachlor	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
D-BHC	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Aldrin	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Chlordane	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Endosulfan I	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
4,4'-DDE	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Dieldrin	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Endrin	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
4,4'-DDD	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Endosulfan II	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
4,4'-DDT	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Methoxychlor	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	09/29/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Barium	EPA-200.8	8.5	1.0	1	ug/L	09/26/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Calcium	EPA-200.8	20000	100	1	ug/L	09/26/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/26/2014	RAL
Iron	EPA-200.8	U	50	1	ug/L	09/26/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Magnesium	EPA-200.8	6600	50	1	ug/L	09/26/2014	RAL
Manganese	EPA-200.8	U	2.0	1	ug/L	09/26/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-04
CLIENT SAMPLE ID	MW-9A-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/26/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Sodium	EPA-200.8	11000	50	1	ug/L	09/26/2014	RAL
Arsenic (Dissolved)	EPA-200.8	1.1	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	8.5	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	21000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	6600	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	11000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	88	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	88	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	0.060	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	1.6	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	79.2	09/20/2014	EBS
C25	NWTPH-HCID	88.6	09/20/2014	EBS
C25 (conc)	NWTPH-HCID	95.5	09/20/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	100	09/18/2014	DLC
Toluene-d8	EPA-8260	99.7	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	96.2	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	89.9	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	96.1	09/23/2014	GAP
2-Fluorophenol	EPA-8270	70.0	09/22/2014	GAP
Phenol-d5	EPA-8270	29.1	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	87.2	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	87.9	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	104	09/22/2014	GAP
Terphenyl-d14	EPA-8270	119	09/22/2014	GAP
DCB	EPA-8082	87.0	10/06/2014	CAS
TCMX	EPA-8081	67.0	09/29/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
130 - 2nd Ave. S. ALS JOB#: EV14090107
Edmonds, WA 98020 ALS SAMPLE#: EV14090107-04
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/18/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/15/2014 12:15:00 PM
CLIENT SAMPLE ID MW-9A-09152014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	76.0	09/29/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-05
CLIENT SAMPLE ID	MW-11-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/18/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-05
CLIENT SAMPLE ID	MW-11-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/18/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/18/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-05
CLIENT SAMPLE ID	MW-11-09152014	DATE RECEIVED:	09/18/2014
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		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-05
CLIENT SAMPLE ID	MW-11-09152014	DATE RECEIVED:	09/18/2014
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan II	EPA-8081	U	0.012	1	ug/L	09/29/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Toxaphene	EPA-8081	U	0.51	1	ug/L	09/29/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	3.7	1.0	1	ug/L	09/26/2014	RAL
Barium	EPA-200.8	52	1.0	1	ug/L	09/26/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Calcium	EPA-200.8	36000	100	1	ug/L	09/26/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/26/2014	RAL
Iron	EPA-200.8	30000	50	1	ug/L	09/26/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Magnesium	EPA-200.8	12000	50	1	ug/L	09/26/2014	RAL
Manganese	EPA-200.8	2100	2.0	1	ug/L	09/26/2014	RAL



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-05
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		COLLECTION DATE:	9/15/2014 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/26/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Sodium	EPA-200.8	16000	50	1	ug/L	09/26/2014	RAL
Arsenic (Dissolved)	EPA-200.8	3.6	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	46	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	34000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	29000	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	11000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	2000	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	16000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	190	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	190	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	1.3	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	5.0	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	82.1	09/20/2014	EBS
C25	NWTPH-HCID	94.3	09/20/2014	EBS
C25 (conc)	NWTPH-HCID	98.9	09/20/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	100	09/18/2014	DLC
Toluene-d8	EPA-8260	98.9	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	95.5	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	94.3	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	89.3	09/23/2014	GAP
2-Fluorophenol	EPA-8270	69.4	09/22/2014	GAP
Phenol-d5	EPA-8270	28.5	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	86.0	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	86.1	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	101	09/22/2014	GAP
Terphenyl-d14	EPA-8270	111	09/22/2014	GAP
DCB	EPA-8082	92.0	10/06/2014	CAS
TCMX	EPA-8081	66.0	09/29/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
130 - 2nd Ave. S. ALS JOB#: EV14090107
Edmonds, WA 98020 ALS SAMPLE#: EV14090107-05
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/18/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/15/2014 1:30:00 PM
CLIENT SAMPLE ID MW-11-09152014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	75.0	09/29/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-06
CLIENT SAMPLE ID	MW-12-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	>310	310	1	ug/L	09/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
TPH-Diesel Range	NWTPH-DX	3700	130	1	ug/L	09/29/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	1200	130	1	ug/L	09/29/2014	EBS
TPH-Oil Range	NWTPH-DX	1400	250	1	ug/L	09/29/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	370	250	1	ug/L	09/29/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/18/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-06
CLIENT SAMPLE ID	MW-12-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/18/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/18/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	0.034	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-06
CLIENT SAMPLE ID	MW-12-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-06
CLIENT SAMPLE ID	MW-12-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-06
CLIENT SAMPLE ID	MW-12-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0064	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0056	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.018	1	ug/L	09/29/2014	CAS
Chlordane	EPA-8081	U	0.047	1	ug/L	09/29/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan II	EPA-8081	U	0.056	1	ug/L	09/29/2014	CAS
4,4'-DDT	EPA-8081	U	0.13	1	ug/L	09/29/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.071	1	ug/L	09/29/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.023	1	ug/L	09/29/2014	CAS
Methoxychlor	EPA-8081	U	0.040	1	ug/L	09/29/2014	CAS
Toxaphene	EPA-8081	U	2.5	1	ug/L	09/29/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	1.3	1.0	1	ug/L	09/26/2014	RAL
Barium	EPA-200.8	70	1.0	1	ug/L	09/26/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Calcium	EPA-200.8	45000	100	1	ug/L	09/26/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/26/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-06
CLIENT SAMPLE ID	MW-12-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Iron	EPA-200.8	14000	50	1	ug/L	09/26/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Magnesium	EPA-200.8	15000	50	1	ug/L	09/26/2014	RAL
Manganese	EPA-200.8	2100	2.0	1	ug/L	09/26/2014	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	09/26/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Sodium	EPA-200.8	80000	50	1	ug/L	09/26/2014	RAL
Arsenic (Dissolved)	EPA-200.8	1.2	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	59	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	40000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	13000	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	1800	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	69000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	350	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	350	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	1.5	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	16	1.0	2	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	75.7	09/20/2014	EBS
C25	NWTPH-HCID	90.9	09/20/2014	EBS
C25 (conc)	NWTPH-HCID	93.0	09/20/2014	EBS
C25	NWTPH-DX	99.7	09/29/2014	EBS
C25	NWTPH-DX w/ SGA	111	09/29/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	102	09/18/2014	DLC
Toluene-d8	EPA-8260	100	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	96.8	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	96.5	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	93.1	09/23/2014	GAP
2-Fluorophenol	EPA-8270	70.0	09/22/2014	GAP
Phenol-d5	EPA-8270	29.0	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
130 - 2nd Ave. S. ALS JOB#: EV14090107
Edmonds, WA 98020 ALS SAMPLE#: EV14090107-06
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/18/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/15/2014 2:30:00 PM
CLIENT SAMPLE ID MW-12-09152014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

Table with 5 columns: SURROGATE, METHOD, %REC, ANALYSIS DATE, ANALYSIS BY. Rows include Nitrobenzene-d5, 2-Fluorobiphenyl, 2,4,6-Tribromophenol, Terphenyl-d14, DCB, TCMX, and DCB.

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and light oil/lube oil.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and light oil/lube oil.
w/ SGA



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-07
CLIENT SAMPLE ID	MW-14-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 3:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
Naphthalene	EPA-8270 SIM	0.024	0.020	1	ug/L	09/26/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/26/2014	GAP
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/26/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/26/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Chloride	EPA-300.0	4.5	0.092	1	MG/L	09/22/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	09/22/2014	GAP
Nitrate as N	EPA-300.0	0.20	0.034	1	MG/L	09/22/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/22/2014	GAP
Sulfate	EPA-300.0	3.0	0.26	1	MG/L	09/22/2014	GAP
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Barium	EPA-200.8	5.7	1.0	1	ug/L	09/26/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Calcium	EPA-200.8	13000	100	1	ug/L	09/26/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/26/2014	RAL
Iron	EPA-200.8	U	50	1	ug/L	09/26/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Magnesium	EPA-200.8	4500	50	1	ug/L	09/26/2014	RAL
Manganese	EPA-200.8	5.6	2.0	1	ug/L	09/26/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-07
CLIENT SAMPLE ID:	MW-14-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 3:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/26/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Sodium	EPA-200.8	5800	50	1	ug/L	09/26/2014	RAL
Arsenic (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	6.0	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	13000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	4500	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	5700	50	1	ug/L	09/29/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	81.8	09/20/2014	EBS
C25	NWTPH-HCID	95.3	09/20/2014	EBS
C25 (conc)	NWTPH-HCID	91.5	09/20/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	116	09/26/2014	GAP
Terphenyl-d14	EPA-8270 SIM	120	09/26/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-08
CLIENT SAMPLE ID	MW-15-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/18/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-08
CLIENT SAMPLE ID	MW-15-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/18/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/18/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-08
CLIENT SAMPLE ID	MW-15-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-08
CLIENT SAMPLE ID	MW-15-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	13	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-08
CLIENT SAMPLE ID:	MW-15-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.01	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
G-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
B-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Heptachlor	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
D-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Aldrin	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Chlordane	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endosulfan I	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
4,4'-DDE	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Dieldrin	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endrin	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
4,4'-DDD	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endosulfan II	EPA-8081	U	0.012	1	ug/L	10/01/2014	CAS
4,4'-DDT	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Methoxychlor	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	10/01/2014	CAS
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/18/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/18/2014	GAP
Total Dissolved Solids	SM2540C	180	5.0	1	MG/L	09/20/2014	DLC
Chloride	EPA-300.0	12	0.092	1	MG/L	09/18/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	09/18/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/18/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/18/2014	GAP
Sulfate	EPA-300.0	1.2	0.26	1	MG/L	09/18/2014	GAP
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	1.3	1.0	1	ug/L	09/29/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-08
CLIENT SAMPLE ID	MW-15-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Barium	EPA-200.8	25	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	21000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	7900	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	8500	50	1	ug/L	09/29/2014	RAL
Manganese	EPA-200.8	910	2.0	1	ug/L	09/29/2014	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	9500	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	1.1	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	23	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	20000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	6300	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	7900	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	890	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	8900	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	110	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	110	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	3.0	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	2.7	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	78.9	09/21/2014	EBS
C25	NWTPH-HCID	92.5	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	96.3	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	101	09/18/2014	DLC
Toluene-d8	EPA-8260	100	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	96.7	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	92.2	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	90.4	09/23/2014	GAP

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-08
CLIENT SAMPLE ID	MW-15-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
2-Fluorophenol	EPA-8270	48.2	09/22/2014	GAP
Phenol-d5	EPA-8270	27.3	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	78.2	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	87.5	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	98.2	09/22/2014	GAP
Terphenyl-d14	EPA-8270	112	09/22/2014	GAP
DCB	EPA-8082	97.0	10/06/2014	CAS
TCMX	EPA-8081	66.0	10/01/2014	CAS
DCB	EPA-8081	76.0	10/01/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-09
CLIENT SAMPLE ID	MW-16-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Naphthalene	EPA-8270 SIM	0.051	0.020	1	ug/L	09/26/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/26/2014	GAP
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/26/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/26/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Chloride	EPA-300.0	22	1.8	20	MG/L	09/22/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	09/22/2014	GAP
Nitrate as N	EPA-300.0	2.8	0.69	20	MG/L	09/22/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/22/2014	GAP
Sulfate	EPA-300.0	170	5.2	20	MG/L	09/22/2014	GAP
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Barium	EPA-200.8	47	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	89000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	320	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	13000	50	1	ug/L	09/29/2014	RAL
Manganese	EPA-200.8	120	2.0	1	ug/L	09/29/2014	RAL

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-09
CLIENT SAMPLE ID	MW-16-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	38000	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	45	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	87000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	110	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	36000	50	1	ug/L	09/29/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	90.2	09/21/2014	EBS
C25	NWTPH-HCID	97.7	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	93.4	09/21/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	112	09/26/2014	GAP
Terphenyl-d14	EPA-8270 SIM	117	09/26/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-10
CLIENT SAMPLE ID	MW-17-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/18/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-10
CLIENT SAMPLE ID	MW-17-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/18/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/18/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	0.025	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-10
CLIENT SAMPLE ID	MW-17-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-10
CLIENT SAMPLE ID	MW-17-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-10
CLIENT SAMPLE ID	MW-17-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0069	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.013	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0086	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0062	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
G-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
B-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Heptachlor	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
D-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Aldrin	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Chlordane	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endosulfan I	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
4,4'-DDE	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Dieldrin	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endrin	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
4,4'-DDD	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endosulfan II	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
4,4'-DDT	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Methoxychlor	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	10/01/2014	CAS
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/18/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/18/2014	GAP
Total Dissolved Solids	SM2540C	280	5.0	1	MG/L	09/20/2014	DLC
Chloride	EPA-300.0	10	0.46	5	MG/L	09/18/2014	GAP
Fluoride	EPA-300.0	0.21	0.16	1	MG/L	09/18/2014	GAP
Nitrate as N	EPA-300.0	0.054	0.034	1	MG/L	09/18/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/18/2014	GAP
Sulfate	EPA-300.0	3.5	0.26	1	MG/L	09/18/2014	GAP
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	2.4	1.0	1	ug/L	09/29/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-10
CLIENT SAMPLE ID	MW-17-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Barium	EPA-200.8	57	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	34000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	17000	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	12000	50	1	ug/L	09/29/2014	RAL
Manganese	EPA-200.8	2000	2.0	1	ug/L	09/29/2014	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	23000	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	2.6	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	55	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	34000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	16000	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	11000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	2000	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	22000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	210	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	210	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	3.1	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	4.3	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	89.2	09/21/2014	EBS
C25	NWTPH-HCID	97.6	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	96.3	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	98.7	09/18/2014	DLC
Toluene-d8	EPA-8260	100	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	101	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	94.5	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	93.3	09/23/2014	GAP

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-10
CLIENT SAMPLE ID	MW-17-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
2-Fluorophenol	EPA-8270	49.4	09/22/2014	GAP
Phenol-d5	EPA-8270	28.1	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	83.0	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	94.8	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	104	09/22/2014	GAP
Terphenyl-d14	EPA-8270	118	09/22/2014	GAP
DCB	EPA-8082	96.0	10/06/2014	CAS
TCMX	EPA-8081	62.0	10/01/2014	CAS
DCB	EPA-8081	73.0	10/01/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-11
CLIENT SAMPLE ID	MW-18-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/18/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-11
CLIENT SAMPLE ID	MW-18-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/18/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/18/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-11
CLIENT SAMPLE ID	MW-18-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-11
CLIENT SAMPLE ID	MW-18-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-11
CLIENT SAMPLE ID	MW-18-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.01	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
G-BHC	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
B-BHC	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Heptachlor	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
D-BHC	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Aldrin	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Chlordane	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Endosulfan I	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
4,4'-DDE	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Dieldrin	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Endrin	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
4,4'-DDD	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Endosulfan II	EPA-8081	U	0.022	1	ug/L	09/29/2014	CAS
4,4'-DDT	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Methoxychlor	EPA-8081	U	0.01	1	ug/L	09/29/2014	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	09/29/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	8.0	1.0	1	ug/L	09/29/2014	RAL
Barium	EPA-200.8	39	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	50000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	44000	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	20000	50	1	ug/L	09/29/2014	RAL
Manganese	EPA-200.8	4700	2.0	1	ug/L	09/29/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-11
CLIENT SAMPLE ID	MW-18-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	15000	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	8.0	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	36	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	47000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	41000	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	19000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	4400	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	14000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	260	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	260	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	1.2	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	8.2	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	97.0	09/21/2014	EBS
C25	NWTPH-HCID	119	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	92.6	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	101	09/18/2014	DLC
Toluene-d8	EPA-8260	99.2	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	96.5	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	96.8	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	99.3	09/23/2014	GAP
2-Fluorophenol	EPA-8270	72.8	09/22/2014	GAP
Phenol-d5	EPA-8270	30.7	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	88.1	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	90.8	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	106	09/22/2014	GAP
Terphenyl-d14	EPA-8270	119	09/22/2014	GAP
DCB	EPA-8082	101	10/06/2014	CAS
TCMX	EPA-8081	63.0	09/29/2014	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-11
CLIENT SAMPLE ID	MW-18-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	81.0	09/29/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-12
CLIENT SAMPLE ID	MW-100-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/18/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroform	EPA-8260	1.2	0.10	1	ug/L	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-12
CLIENT SAMPLE ID	MW-100-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/18/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/18/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-12
CLIENT SAMPLE ID	MW-100-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-12
CLIENT SAMPLE ID	MW-100-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-12
CLIENT SAMPLE ID	MW-100-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan II	EPA-8081	U	0.012	1	ug/L	09/29/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/29/2014	CAS
Toxaphene	EPA-8081	U	0.51	1	ug/L	09/29/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Barium	EPA-200.8	11	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	22000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	400	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	9900	50	1	ug/L	09/29/2014	RAL
Manganese	EPA-200.8	200	2.0	1	ug/L	09/29/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-12
CLIENT SAMPLE ID	MW-100-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	21000	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	1.0	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	8.2	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	22000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	9400	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	190	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	20000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	130	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	130	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	0.21	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	1.6	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	76.6	09/21/2014	EBS
C25	NWTPH-HCID	98.4	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	97.9	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	101	09/18/2014	DLC
Toluene-d8	EPA-8260	98.5	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	96.5	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	88.9	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	90.1	09/23/2014	GAP
2-Fluorophenol	EPA-8270	65.8	09/22/2014	GAP
Phenol-d5	EPA-8270	26.7	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	83.9	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	89.4	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	96.8	09/22/2014	GAP
Terphenyl-d14	EPA-8270	113	09/22/2014	GAP
DCB	EPA-8082	90.0	10/06/2014	CAS
TCMX	EPA-8081	70.0	09/29/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
130 - 2nd Ave. S. ALS JOB#: EV14090107
Edmonds, WA 98020 ALS SAMPLE#: EV14090107-12
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/18/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/16/2014 3:05:00 PM
CLIENT SAMPLE ID MW-100-09162014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	80.0	09/29/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-13
CLIENT SAMPLE ID	MW-101-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	>310	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	>310	310	1	ug/L	09/21/2014	EBS
TPH-Diesel Range	NWTPH-DX	1800	130	1	ug/L	09/29/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	520	130	1	ug/L	09/29/2014	EBS
TPH-Oil Range	NWTPH-DX	1500	250	1	ug/L	09/29/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	360	250	1	ug/L	09/29/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/18/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-13
CLIENT SAMPLE ID	MW-101-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/18/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/18/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	0.060	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-13
CLIENT SAMPLE ID	MW-101-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	110	20	10	ug/L	09/24/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-13
CLIENT SAMPLE ID	MW-101-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-13
CLIENT SAMPLE ID	MW-101-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Endosulfan II	EPA-8081	U	0.040	1	ug/L	10/01/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Toxaphene	EPA-8081	U	0.51	1	ug/L	10/01/2014	CAS
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/18/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/18/2014	GAP
Total Dissolved Solids	SM2540C	430	5.0	1	MG/L	09/20/2014	DLC
Chloride	EPA-300.0	20	4.6	50	MG/L	09/18/2014	GAP
Fluoride	EPA-300.0	0.71	0.16	1	MG/L	09/18/2014	GAP
Nitrate as N	EPA-300.0	3.5	1.7	50	MG/L	09/18/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/18/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-13
CLIENT SAMPLE ID	MW-101-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Sulfate	EPA-300.0	U	0.26	1	MG/L	09/18/2014	GAP
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	3.1	1.0	1	ug/L	09/29/2014	RAL
Barium	EPA-200.8	93	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	71000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	2.6	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	23000	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	1.5	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	22000	50	1	ug/L	09/29/2014	RAL
Manganese	EPA-200.8	3200	2.0	1	ug/L	09/29/2014	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	31000	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	2.9	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	74	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	65000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	19000	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	20000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	3000	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	29000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	360	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	360	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	1.8	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	33	1.0	2	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	64.1	09/21/2014	EBS
C25	NWTPH-HCID	90.8	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	90.2	09/21/2014	EBS
C25	NWTPH-DX	96.6	09/29/2014	EBS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-13
CLIENT SAMPLE ID	MW-101-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	100	09/29/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	103	09/18/2014	DLC
Toluene-d8	EPA-8260	99.4	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	95.2	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	90.9	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	79.3	09/23/2014	GAP
2-Fluorophenol	EPA-8270	54.3	09/22/2014	GAP
2-Fluorophenol 10X Dilution	EPA-8270	65.0	09/24/2014	GAP
Phenol-d5	EPA-8270	32.0	09/22/2014	GAP
Phenol-d5 10X Dilution	EPA-8270	26.3	09/24/2014	GAP
Nitrobenzene-d5	EPA-8270	86.2	09/22/2014	GAP
Nitrobenzene-d5 10X Dilution	EPA-8270	91.0	09/24/2014	GAP
2-Fluorobiphenyl	EPA-8270	89.6	09/22/2014	GAP
2-Fluorobiphenyl 10X Dilution	EPA-8270	79.7	09/24/2014	GAP
2,4,6-Tribromophenol	EPA-8270	98.9	09/22/2014	GAP
2,4,6-Tribromophenol 10X Dilution	EPA-8270	77.2	09/24/2014	GAP
Terphenyl-d14	EPA-8270	106	09/22/2014	GAP
Terphenyl-d14 10X Dilution	EPA-8270	114	09/24/2014	GAP
DCB	EPA-8082	81.0	10/06/2014	CAS
TCMX	EPA-8081	52.0	10/01/2014	CAS
DCB	EPA-8081	57.0	10/01/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.
 w/ SGA



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-14
CLIENT SAMPLE ID	MW-102-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 11:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/18/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/18/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-14
CLIENT SAMPLE ID	MW-102-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 11:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/18/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/18/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	0.029	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-14
CLIENT SAMPLE ID	MW-102-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 11:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-14
CLIENT SAMPLE ID	MW-102-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 11:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-14
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	0.0085	0.0051	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Toxaphene	EPA-8081	U	0.51	1	ug/L	09/30/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Barium	EPA-200.8	22	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	22000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	4700	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	8900	50	1	ug/L	09/29/2014	RAL
Manganese	EPA-200.8	740	2.0	1	ug/L	09/29/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-14
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		COLLECTION DATE:	9/16/2014 11:40:00 AM
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	15000	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	1.3	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	21	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	22000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	4200	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	8300	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	710	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	14000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	130	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	130	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	2.5	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	1.9	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	61.5	09/21/2014	EBS
C25	NWTPH-HCID	92.4	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	94.7	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	100	09/18/2014	DLC
Toluene-d8	EPA-8260	102	09/18/2014	DLC
4-Bromofluorobenzene	EPA-8260	99.2	09/18/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	18.4	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	93.6	09/23/2014	GAP
2-Fluorophenol	EPA-8270	5.00 GS1	09/22/2014	GAP
Phenol-d5	EPA-8270	8.85	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	88.2	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	92.6	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	13.0 GS1	09/22/2014	GAP
Terphenyl-d14	EPA-8270	122	09/22/2014	GAP
DCB	EPA-8082	93.0	10/06/2014	CAS
TCMX	EPA-8081	67.0	09/30/2014	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-14
CLIENT SAMPLE ID	MW-102-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 11:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	77.0	09/30/2014	CAS

GS1 - Surrogate outside of control limits due to matrix effect.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-15
CLIENT SAMPLE ID	MW-103-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/19/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/19/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/19/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/19/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/19/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-15
CLIENT SAMPLE ID	MW-103-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/19/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/19/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/19/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8270 SIM	0.042	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-15
CLIENT SAMPLE ID	MW-103-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-15
CLIENT SAMPLE ID	MW-103-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-15
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		COLLECTION DATE:	9/16/2014 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	0.022	0.0051	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0066	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDD	EPA-8081	0.15	0.011	1	ug/L	09/30/2014	CAS
Endosulfan II	EPA-8081	U	0.017	1	ug/L	09/30/2014	CAS
4,4'-DDT	EPA-8081	0.090	0.011	1	ug/L	09/30/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Toxaphene	EPA-8081	U	0.51	1	ug/L	09/30/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	3.5	1.0	1	ug/L	09/29/2014	RAL
Barium	EPA-200.8	53	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	36000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	22000	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	13000	50	1	ug/L	09/29/2014	RAL
Manganese	EPA-200.8	2500	2.0	1	ug/L	09/29/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-15
CLIENT SAMPLE ID	MW-103-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	23000	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	3.8	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	50	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	35000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	22000	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	2500	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	22000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	220	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	220	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	3.1	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	4.0	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	61.5	09/21/2014	EBS
C25	NWTPH-HCID	91.3	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	94.3	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	101	09/19/2014	DLC
Toluene-d8	EPA-8260	101	09/19/2014	DLC
4-Bromofluorobenzene	EPA-8260	99.9	09/19/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	87.2	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	91.2	09/23/2014	GAP
2-Fluorophenol	EPA-8270	45.5	09/22/2014	GAP
Phenol-d5	EPA-8270	17.2	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	80.7	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	86.8	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	91.0	09/22/2014	GAP
Terphenyl-d14	EPA-8270	113	09/22/2014	GAP
DCB	EPA-8082	95.0	10/06/2014	CAS
TCMX	EPA-8081	63.0	09/30/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
130 - 2nd Ave. S. ALS JOB#: EV14090107
Edmonds, WA 98020 ALS SAMPLE#: EV14090107-15
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/18/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/16/2014 1:00:00 PM
CLIENT SAMPLE ID MW-103-09162014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	75.0	09/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-16
CLIENT SAMPLE ID	MW-104-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/19/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/19/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/19/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/19/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/19/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-16
CLIENT SAMPLE ID	MW-104-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/19/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/19/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/19/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8270 SIM	0.039	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-16
CLIENT SAMPLE ID	MW-104-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-16
CLIENT SAMPLE ID	MW-104-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-16
CLIENT SAMPLE ID	MW-104-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	0.027	0.0052	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	09/30/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	5.8	1.0	1	ug/L	09/29/2014	RAL
Barium	EPA-200.8	51	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	36000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	27000	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	1.0	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	13000	50	1	ug/L	09/29/2014	RAL
Manganese	EPA-200.8	2400	2.0	1	ug/L	09/29/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-16
CLIENT SAMPLE ID	MW-104-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	18000	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	5.7	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	49	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	36000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	26000	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	2300	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	18000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	200	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	200	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	2.0	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	4.9	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	63.4	09/21/2014	EBS
C25	NWTPH-HCID	92.6	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	95.5	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	101	09/19/2014	DLC
Toluene-d8	EPA-8260	100	09/19/2014	DLC
4-Bromofluorobenzene	EPA-8260	97.7	09/19/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	89.8	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	87.2	09/23/2014	GAP
2-Fluorophenol	EPA-8270	36.9	09/22/2014	GAP
Phenol-d5	EPA-8270	17.7	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	82.1	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	89.9	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	97.7	09/22/2014	GAP
Terphenyl-d14	EPA-8270	118	09/22/2014	GAP
DCB	EPA-8082	96.0	10/06/2014	CAS
TCMX	EPA-8081	65.0	09/30/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
130 - 2nd Ave. S. ALS JOB#: EV14090107
Edmonds, WA 98020 ALS SAMPLE#: EV14090107-16
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/18/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/16/2014 2:20:00 PM
CLIENT SAMPLE ID MW-104-09162014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	75.0	09/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-17
CLIENT SAMPLE ID	MW-105-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/19/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/19/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/19/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/19/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/19/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-17
CLIENT SAMPLE ID	MW-105-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/19/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/19/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/19/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8270 SIM	0.034	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	0.097	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-17
CLIENT SAMPLE ID	MW-105-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-17
CLIENT SAMPLE ID	MW-105-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-17
CLIENT SAMPLE ID	MW-105-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	0.031	0.0052	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan II	EPA-8081	U	0.014	1	ug/L	09/30/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	09/30/2014	CAS
Total Dissolved Solids	SM2540C	900	5.0	1	MG/L	09/22/2014	DLC
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	3.7	1.0	1	ug/L	09/29/2014	RAL
Barium	EPA-200.8	60	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	29000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	20000	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	9600	50	1	ug/L	09/29/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-17
CLIENT SAMPLE ID	MW-105-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Manganese	EPA-200.8	2700	2.0	1	ug/L	09/29/2014	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	35000	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	3.7	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	54	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	29000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	20000	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	9100	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	2700	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	28000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	220	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	220	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	0.13	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	6.2	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	53.4	09/21/2014	EBS
C25	NWTPH-HCID	84.7	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	94.3	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	101	09/19/2014	DLC
Toluene-d8	EPA-8260	101	09/19/2014	DLC
4-Bromofluorobenzene	EPA-8260	98.0	09/19/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	87.9	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	99.4	09/23/2014	GAP
2-Fluorophenol	EPA-8270	48.5	09/22/2014	GAP
Phenol-d5	EPA-8270	18.4	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	83.6	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	95.6	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	97.9	09/22/2014	GAP
Terphenyl-d14	EPA-8270	127	09/22/2014	GAP
DCB	EPA-8082	92.0	10/06/2014	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-17
CLIENT SAMPLE ID	MW-105-09152014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/15/2014 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TCMX	EPA-8081	63.0	09/30/2014	CAS
DCB	EPA-8081	71.0	09/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-18
CLIENT SAMPLE ID	MW-106-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/19/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/19/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/19/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/19/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/19/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-18
CLIENT SAMPLE ID	MW-106-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/19/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/19/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/19/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8270 SIM	0.064	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	0.055	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	0.080	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	0.042	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-18
CLIENT SAMPLE ID	MW-106-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	0.030	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-18
CLIENT SAMPLE ID	MW-106-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-18
CLIENT SAMPLE ID:	MW-106-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	0.035	0.0051	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Toxaphene	EPA-8081	U	0.51	1	ug/L	09/30/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	5.2	1.0	1	ug/L	09/29/2014	RAL
Barium	EPA-200.8	46	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	27000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	7300	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	10000	50	1	ug/L	09/29/2014	RAL
Manganese	EPA-200.8	1800	2.0	1	ug/L	09/29/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-18
CLIENT SAMPLE ID	MW-106-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	64000	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	5.7	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	45	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	28000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	7000	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	11000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	2000	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	57000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	280	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	280	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	5.3	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	5.8	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	58.4	09/21/2014	EBS
C25	NWTPH-HCID	87.8	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	98.9	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	101	09/19/2014	DLC
Toluene-d8	EPA-8260	98.9	09/19/2014	DLC
4-Bromofluorobenzene	EPA-8260	95.2	09/19/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	91.7	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	95.0	09/23/2014	GAP
2-Fluorophenol	EPA-8270	37.3	09/22/2014	GAP
Phenol-d5	EPA-8270	19.4	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	89.6	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	92.1	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	100	09/22/2014	GAP
Terphenyl-d14	EPA-8270	123	09/22/2014	GAP
DCB	EPA-8082	96.0	10/06/2014	CAS
TCMX	EPA-8081	62.0	09/30/2014	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-18
CLIENT SAMPLE ID	MW-106-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 11:35:00 AM
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SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	74.0	09/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-19
CLIENT SAMPLE ID	MW-107-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 8:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/19/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/19/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/19/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/19/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/19/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-19
CLIENT SAMPLE ID	MW-107-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 8:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/19/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/19/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/19/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-19
CLIENT SAMPLE ID	MW-107-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 8:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-19
CLIENT SAMPLE ID	MW-107-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 8:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-19
CLIENT SAMPLE ID	MW-107-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 8:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.01	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	0.021	0.0050	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
G-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
B-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Heptachlor	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
D-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Aldrin	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Chlordane	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endosulfan I	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
4,4'-DDE	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Dieldrin	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endrin	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
4,4'-DDD	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endosulfan II	EPA-8081	U	0.013	1	ug/L	10/01/2014	CAS
4,4'-DDT	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Methoxychlor	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	10/01/2014	CAS
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/18/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/18/2014	GAP
Total Dissolved Solids	SM2540C	180	5.0	1	MG/L	09/20/2014	DLC
Chloride	EPA-300.0	32	0.92	10	MG/L	09/18/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	09/18/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/18/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/18/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	09/18/2014	GAP
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	3.5	1.0	1	ug/L	09/29/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-19
CLIENT SAMPLE ID	MW-107-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 8:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Barium	EPA-200.8	63	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	39000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	24000	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	14000	50	1	ug/L	09/29/2014	RAL
Manganese	EPA-200.8	2400	2.0	1	ug/L	09/29/2014	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	22000	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	3.6	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	62	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	38000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	24000	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	2400	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	21000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	220	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	220	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	4.0	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	4.6	0.50	1	MG/L	09/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	75.5	09/21/2014	EBS
C25	NWTPH-HCID	91.7	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	97.9	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	101	09/19/2014	DLC
Toluene-d8	EPA-8260	99.6	09/19/2014	DLC
4-Bromofluorobenzene	EPA-8260	95.7	09/19/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	91.4	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	101	09/23/2014	GAP

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-19
CLIENT SAMPLE ID	MW-107-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 8:20:00 AM
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SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
2-Fluorophenol	EPA-8270	47.4	09/22/2014	GAP
Phenol-d5	EPA-8270	17.4	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	80.9	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	90.5	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	96.8	09/22/2014	GAP
Terphenyl-d14	EPA-8270	117	09/22/2014	GAP
DCB	EPA-8082	95.0	10/06/2014	CAS
TCMX	EPA-8081	56.0	10/01/2014	CAS
DCB	EPA-8081	70.0	10/01/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-20
CLIENT SAMPLE ID	MW-108-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/19/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/19/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/19/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/19/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/19/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-20
CLIENT SAMPLE ID	MW-108-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/19/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/19/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/19/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-20
CLIENT SAMPLE ID	MW-108-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-20
CLIENT SAMPLE ID	MW-108-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-20
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	0.035	0.0051	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	10/01/2014	CAS
Toxaphene	EPA-8081	U	0.51	1	ug/L	10/01/2014	CAS
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/18/2014	GAP
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/18/2014	GAP
Total Dissolved Solids	SM2540C	260	5.0	1	MG/L	09/20/2014	DLC
Chloride	EPA-300.0	19	0.092	1	MG/L	09/18/2014	GAP
Fluoride	EPA-300.0	0.23	0.16	1	MG/L	09/18/2014	GAP
Nitrate as N	EPA-300.0	0.059	0.034	1	MG/L	09/18/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/18/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	09/18/2014	GAP
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	4.5	1.0	1	ug/L	09/29/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
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CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-20
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
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Barium	EPA-200.8	53	1.0	1	ug/L	09/29/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium	EPA-200.8	37000	100	1	ug/L	09/29/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron	EPA-200.8	29000	50	1	ug/L	09/29/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium	EPA-200.8	13000	50	1	ug/L	09/29/2014	RAL
Manganese	EPA-200.8	2400	2.0	1	ug/L	09/29/2014	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium	EPA-200.8	17000	50	1	ug/L	09/29/2014	RAL
Arsenic (Dissolved)	EPA-200.8	4.8	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	53	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	36000	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	29000	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	2300	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	16000	50	1	ug/L	09/29/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	210	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	210	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	3.0	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	5.2	0.50	1	MG/L	09/23/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	68.7	09/21/2014	EBS
C25	NWTPH-HCID	91.6	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	97.6	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	99.8	09/19/2014	DLC
Toluene-d8	EPA-8260	101	09/19/2014	DLC
4-Bromofluorobenzene	EPA-8260	99.5	09/19/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	88.7	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	85.7	09/23/2014	GAP

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-20
CLIENT SAMPLE ID	MW-108-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
2-Fluorophenol	EPA-8270	50.4	09/22/2014	GAP
Phenol-d5	EPA-8270	19.1	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	83.7	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	93.1	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	98.3	09/22/2014	GAP
Terphenyl-d14	EPA-8270	117	09/22/2014	GAP
DCB	EPA-8082	98.0	10/06/2014	CAS
TCMX	EPA-8081	62.0	10/01/2014	CAS
DCB	EPA-8081	71.0	10/01/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-21
CLIENT SAMPLE ID	MW-109-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 1:08:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/19/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/19/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/19/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroform	EPA-8260	0.57	0.10	1	ug/L	09/19/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/19/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/19/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-21
CLIENT SAMPLE ID	MW-109-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 1:08:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/19/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/19/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/19/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-21
CLIENT SAMPLE ID	MW-109-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 1:08:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-21
CLIENT SAMPLE ID	MW-109-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 1:08:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-21
CLIENT SAMPLE ID	MW-109-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 1:08:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan II	EPA-8081	U	0.018	1	ug/L	09/30/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	09/30/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Barium	EPA-200.8	13	1.0	1	ug/L	09/25/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Calcium	EPA-200.8	27000	100	1	ug/L	09/25/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Iron	EPA-200.8	280	50	1	ug/L	09/25/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Magnesium	EPA-200.8	10000	50	1	ug/L	09/25/2014	RAL
Manganese	EPA-200.8	890	2.0	1	ug/L	09/25/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-21
CLIENT SAMPLE ID	MW-109-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 1:08:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/25/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Sodium	EPA-200.8	15000	50	1	ug/L	09/25/2014	RAL
Arsenic (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Barium (Dissolved)	EPA-200.8	11	1.0	1	ug/L	09/25/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Calcium (Dissolved)	EPA-200.8	26000	100	1	ug/L	09/25/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	09/25/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Magnesium (Dissolved)	EPA-200.8	9900	50	1	ug/L	09/25/2014	RAL
Manganese (Dissolved)	EPA-200.8	860	2.0	1	ug/L	09/25/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/25/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Sodium (Dissolved)	EPA-200.8	14000	50	1	ug/L	09/25/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	130	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	130	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	0.18	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	1.1	0.50	1	MG/L	09/23/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	84.8	09/21/2014	EBS
C25	NWTPH-HCID	95.6	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	98.0	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	101	09/19/2014	DLC
Toluene-d8	EPA-8260	100	09/19/2014	DLC
4-Bromofluorobenzene	EPA-8260	99.3	09/19/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	87.6	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	96.8	09/23/2014	GAP
2-Fluorophenol	EPA-8270	52.8	09/22/2014	GAP
Phenol-d5	EPA-8270	19.5	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	83.4	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	95.8	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	98.4	09/22/2014	GAP
Terphenyl-d14	EPA-8270	129	09/22/2014	GAP
DCB	EPA-8082	97.0	10/06/2014	CAS
TCMX	EPA-8081	75.0	09/30/2014	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-21
CLIENT SAMPLE ID	MW-109-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 1:08:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	83.0	09/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-22
CLIENT SAMPLE ID	TP-MW-1-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 9:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Naphthalene	EPA-8270 SIM	0.029	0.020	1	ug/L	09/26/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/26/2014	GAP
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/26/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/26/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Chloride	EPA-300.0	7.2	0.092	1	MG/L	09/22/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	09/22/2014	GAP
Nitrate as N	EPA-300.0	1.9	0.034	1	MG/L	09/22/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/22/2014	GAP
Sulfate	EPA-300.0	9.0	0.26	1	MG/L	09/22/2014	GAP
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Barium	EPA-200.8	9.2	1.0	1	ug/L	09/25/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Calcium	EPA-200.8	20000	100	1	ug/L	09/25/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Iron	EPA-200.8	U	50	1	ug/L	09/25/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Magnesium	EPA-200.8	6700	50	1	ug/L	09/25/2014	RAL
Manganese	EPA-200.8	5.8	2.0	1	ug/L	09/25/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-22
CLIENT SAMPLE ID	TP-MW-1-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 9:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/25/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Sodium	EPA-200.8	11000	50	1	ug/L	09/25/2014	RAL
Arsenic (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Barium (Dissolved)	EPA-200.8	8.3	1.0	1	ug/L	09/25/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Calcium (Dissolved)	EPA-200.8	19000	100	1	ug/L	09/25/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	09/25/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Magnesium (Dissolved)	EPA-200.8	6600	50	1	ug/L	09/25/2014	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/25/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Sodium (Dissolved)	EPA-200.8	11000	50	1	ug/L	09/25/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	89.3	09/21/2014	EBS
C25	NWTPH-HCID	99.8	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	95.2	09/21/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	118	09/26/2014	GAP
Terphenyl-d14	EPA-8270 SIM	117	09/26/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-23
CLIENT SAMPLE ID	TP-MW-2-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 11:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/26/2014	GAP
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	09/26/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	09/26/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Chloride	EPA-300.0	14	0.092	1	MG/L	09/22/2014	GAP
Fluoride	EPA-300.0	0.20	0.16	1	MG/L	09/22/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/22/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/22/2014	GAP
Sulfate	EPA-300.0	6.8	0.26	1	MG/L	09/22/2014	GAP
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	3.8	1.0	1	ug/L	09/25/2014	RAL
Barium	EPA-200.8	18	1.0	1	ug/L	09/25/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Calcium	EPA-200.8	30000	100	1	ug/L	09/25/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Iron	EPA-200.8	12000	50	1	ug/L	09/25/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Magnesium	EPA-200.8	10000	50	1	ug/L	09/25/2014	RAL
Manganese	EPA-200.8	1300	2.0	1	ug/L	09/25/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-23
CLIENT SAMPLE ID	TP-MW-2-09172014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/17/2014 11:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/25/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Sodium	EPA-200.8	21000	50	1	ug/L	09/25/2014	RAL
Arsenic (Dissolved)	EPA-200.8	3.9	1.0	1	ug/L	09/25/2014	RAL
Barium (Dissolved)	EPA-200.8	17	1.0	1	ug/L	09/25/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Calcium (Dissolved)	EPA-200.8	30000	100	1	ug/L	09/25/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Iron (Dissolved)	EPA-200.8	12000	50	1	ug/L	09/25/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Magnesium (Dissolved)	EPA-200.8	10000	50	1	ug/L	09/25/2014	RAL
Manganese (Dissolved)	EPA-200.8	1300	2.0	1	ug/L	09/25/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/25/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Sodium (Dissolved)	EPA-200.8	21000	50	1	ug/L	09/25/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	68.0	09/21/2014	EBS
C25	NWTPH-HCID	85.5	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	95.5	09/21/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	125	09/26/2014	GAP
Terphenyl-d14	EPA-8270 SIM	106	09/26/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-24
CLIENT SAMPLE ID	FPP-MW-3-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/19/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/19/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/19/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/19/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/19/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-24
CLIENT SAMPLE ID	FPP-MW-3-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/19/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/19/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/19/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-24
CLIENT SAMPLE ID	FPP-MW-3-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/22/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/22/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-24
CLIENT SAMPLE ID	FPP-MW-3-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/22/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/22/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/22/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	2.1	2.0	1	ug/L	09/22/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-24
CLIENT SAMPLE ID	FPP-MW-3-09162014	DATE RECEIVED:	09/18/2014
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/22/2014	GAP
PCB-1016	EPA-8082	U	0.0053	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0053	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0053	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0053	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0053	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0053	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Toxaphene	EPA-8081	U	0.53	1	ug/L	09/30/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	1.2	1.0	1	ug/L	09/25/2014	RAL
Barium	EPA-200.8	15	1.0	1	ug/L	09/25/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Calcium	EPA-200.8	22000	100	1	ug/L	09/25/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Iron	EPA-200.8	7700	50	1	ug/L	09/25/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Magnesium	EPA-200.8	8700	50	1	ug/L	09/25/2014	RAL
Manganese	EPA-200.8	450	2.0	1	ug/L	09/25/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-24
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/25/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Sodium	EPA-200.8	16000	50	1	ug/L	09/25/2014	RAL
Arsenic (Dissolved)	EPA-200.8	1.4	1.0	1	ug/L	09/25/2014	RAL
Barium (Dissolved)	EPA-200.8	15	1.0	1	ug/L	09/25/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Calcium (Dissolved)	EPA-200.8	22000	100	1	ug/L	09/25/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Iron (Dissolved)	EPA-200.8	7600	50	1	ug/L	09/25/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Magnesium (Dissolved)	EPA-200.8	8500	50	1	ug/L	09/25/2014	RAL
Manganese (Dissolved)	EPA-200.8	440	2.0	1	ug/L	09/25/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/25/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Sodium (Dissolved)	EPA-200.8	16000	50	1	ug/L	09/25/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	120	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	120	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	0.43	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	1.8	0.50	1	MG/L	09/23/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	77.3	09/21/2014	EBS
C25	NWTPH-HCID	96.6	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	95.3	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	102	09/19/2014	DLC
Toluene-d8	EPA-8260	100	09/19/2014	DLC
4-Bromofluorobenzene	EPA-8260	98.8	09/19/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	86.3	09/23/2014	GAP
Terphenyl-d14	EPA-8270 SIM	94.1	09/23/2014	GAP
2-Fluorophenol	EPA-8270	49.0	09/22/2014	GAP
Phenol-d5	EPA-8270	18.9	09/22/2014	GAP
Nitrobenzene-d5	EPA-8270	87.1	09/22/2014	GAP
2-Fluorobiphenyl	EPA-8270	95.2	09/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270	93.5	09/22/2014	GAP
Terphenyl-d14	EPA-8270	124	09/22/2014	GAP
DCB	EPA-8082	99.0	10/06/2014	CAS
TCMX	EPA-8081	71.0	09/30/2014	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-24
CLIENT SAMPLE ID	FPP-MW-3-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	78.0	09/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-25
CLIENT SAMPLE ID	MW-DUP-1-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/19/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/19/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/19/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/19/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/19/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-25
CLIENT SAMPLE ID	MW-DUP-1-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/19/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/19/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/19/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8270 SIM	0.031	0.020	1	ug/L	09/29/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/29/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-25
CLIENT SAMPLE ID	MW-DUP-1-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/29/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/29/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/24/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/24/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/24/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-25
CLIENT SAMPLE ID	MW-DUP-1-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/24/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/24/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/24/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/24/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-25
CLIENT SAMPLE ID	MW-DUP-1-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
PCB-1016	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	09/30/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	1.7	1.0	1	ug/L	09/25/2014	RAL
Barium	EPA-200.8	15	1.0	1	ug/L	09/25/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Calcium	EPA-200.8	22000	100	1	ug/L	09/25/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Iron	EPA-200.8	7500	50	1	ug/L	09/25/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Magnesium	EPA-200.8	8600	50	1	ug/L	09/25/2014	RAL
Manganese	EPA-200.8	440	2.0	1	ug/L	09/25/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-25
CLIENT SAMPLE ID	MW-DUP-1-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 9:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/25/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Sodium	EPA-200.8	16000	50	1	ug/L	09/25/2014	RAL
Arsenic (Dissolved)	EPA-200.8	1.4	1.0	1	ug/L	09/25/2014	RAL
Barium (Dissolved)	EPA-200.8	15	1.0	1	ug/L	09/25/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Calcium (Dissolved)	EPA-200.8	22000	100	1	ug/L	09/25/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Iron (Dissolved)	EPA-200.8	7500	50	1	ug/L	09/25/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Magnesium (Dissolved)	EPA-200.8	8500	50	1	ug/L	09/25/2014	RAL
Manganese (Dissolved)	EPA-200.8	440	2.0	1	ug/L	09/25/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/25/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Sodium (Dissolved)	EPA-200.8	16000	50	1	ug/L	09/25/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	120	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	120	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	0.52	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	1.8	0.50	1	MG/L	09/23/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	87.1	09/21/2014	EBS
C25	NWTPH-HCID	93.6	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	100	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	100	09/19/2014	DLC
Toluene-d8	EPA-8260	101	09/19/2014	DLC
4-Bromofluorobenzene	EPA-8260	100	09/19/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	98.9	09/29/2014	GAP
Terphenyl-d14	EPA-8270 SIM	81.4	09/29/2014	GAP
2-Fluorophenol	EPA-8270	58.7	09/24/2014	GAP
Phenol-d5	EPA-8270	24.1	09/24/2014	GAP
Nitrobenzene-d5	EPA-8270	69.2	09/24/2014	GAP
2-Fluorobiphenyl	EPA-8270	72.9	09/24/2014	GAP
2,4,6-Tribromophenol	EPA-8270	97.2	09/24/2014	GAP
Terphenyl-d14	EPA-8270	129	09/24/2014	GAP
DCB	EPA-8082	106	10/06/2014	CAS
TCMX	EPA-8081	69.0	09/30/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
130 - 2nd Ave. S. ALS JOB#: EV14090107
Edmonds, WA 98020 ALS SAMPLE#: EV14090107-25
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/18/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/16/2014 9:15:00 AM
CLIENT SAMPLE ID MW-DUP-1-09162014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	79.0	09/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-26
CLIENT SAMPLE ID	MW-DUP-2-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 7:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/19/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/19/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/19/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/19/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/19/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-26
CLIENT SAMPLE ID	MW-DUP-2-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 7:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/19/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/19/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/19/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8270 SIM	0.074	0.020	1	ug/L	09/29/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	0.079	0.020	1	ug/L	09/29/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	0.12	0.020	1	ug/L	09/29/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Acenaphthene	EPA-8270 SIM	0.056	0.020	1	ug/L	09/29/2014	GAP
Fluorene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	ug/L	09/29/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-26
CLIENT SAMPLE ID	MW-DUP-2-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 7:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	0.031	0.020	1	ug/L	09/29/2014	GAP
Anthracene	EPA-8270 SIM	0.036	0.020	1	ug/L	09/29/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	ug/L	09/29/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	ug/L	09/29/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/24/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/24/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/24/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-26
CLIENT SAMPLE ID	MW-DUP-2-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 7:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/24/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/24/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/24/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/24/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-26
CLIENT SAMPLE ID	MW-DUP-2-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 7:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
PCB-1016	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	0.036	0.0052	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	ug/L	10/06/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	09/30/2014	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	09/30/2014	CAS
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL
Arsenic	EPA-200.8	5.1	1.0	1	ug/L	09/25/2014	RAL
Barium	EPA-200.8	45	1.0	1	ug/L	09/25/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Calcium	EPA-200.8	28000	100	1	ug/L	09/25/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Iron	EPA-200.8	6800	50	1	ug/L	09/25/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Magnesium	EPA-200.8	11000	50	1	ug/L	09/25/2014	RAL
Manganese	EPA-200.8	1800	2.0	1	ug/L	09/25/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-26
CLIENT SAMPLE ID	MW-DUP-2-09162014	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 7:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Selenium	EPA-200.8	U	4.0	1	ug/L	09/25/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Sodium	EPA-200.8	65000	50	1	ug/L	09/25/2014	RAL
Arsenic (Dissolved)	EPA-200.8	5.3	1.0	1	ug/L	09/25/2014	RAL
Barium (Dissolved)	EPA-200.8	45	1.0	1	ug/L	09/25/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Calcium (Dissolved)	EPA-200.8	29000	100	1	ug/L	09/25/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/25/2014	RAL
Iron (Dissolved)	EPA-200.8	6900	50	1	ug/L	09/25/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Magnesium (Dissolved)	EPA-200.8	11000	50	1	ug/L	09/25/2014	RAL
Manganese (Dissolved)	EPA-200.8	1900	2.0	1	ug/L	09/25/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/25/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/25/2014	RAL
Sodium (Dissolved)	EPA-200.8	62000	50	1	ug/L	09/25/2014	RAL
Alkalinity as CaCO3, Total	SM2320B	280	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	280	15	1	MG/L	09/23/2014	CAS
Ammonia as N	EPA-350.1	5.6	0.050	1	MG/L	09/30/2014	CAS
Total Organic Carbon (TOC)	SM5310C	5.8	0.50	1	MG/L	09/23/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	95.5	09/21/2014	EBS
C25	NWTPH-HCID	98.2	09/21/2014	EBS
C25 (conc)	NWTPH-HCID	95.3	09/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	101	09/19/2014	DLC
Toluene-d8	EPA-8260	101	09/19/2014	DLC
4-Bromofluorobenzene	EPA-8260	98.0	09/19/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	107	09/29/2014	GAP
Terphenyl-d14	EPA-8270 SIM	89.6	09/29/2014	GAP
2-Fluorophenol	EPA-8270	58.0	09/24/2014	GAP
Phenol-d5	EPA-8270	31.9	09/24/2014	GAP
Nitrobenzene-d5	EPA-8270	95.0	09/24/2014	GAP
2-Fluorobiphenyl	EPA-8270	96.7	09/24/2014	GAP
2,4,6-Tribromophenol	EPA-8270	124 GS1	09/24/2014	GAP
Terphenyl-d14	EPA-8270	151 GS1	09/24/2014	GAP
DCB	EPA-8082	101	10/06/2014	CAS
TCMX	EPA-8081	67.0	09/30/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
130 - 2nd Ave. S. ALS JOB#: EV14090107
Edmonds, WA 98020 ALS SAMPLE#: EV14090107-26
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 09/18/2014
CLIENT PROJECT: Yakima Landfill / #1148008.010.014 COLLECTION DATE: 9/16/2014 7:35:00 AM
CLIENT SAMPLE ID MW-DUP-2-09162014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8081	79.0	09/30/2014	CAS

GS1 - Surrogate outside of control limits due to matrix effect.
U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-27
CLIENT SAMPLE ID	TRIP BLANKS	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Volatile Range	NWTPH-GX	U	50	1	ug/L	09/24/2014	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/19/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/19/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/19/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/19/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/19/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	ALS SAMPLE#:	EV14090107-27
CLIENT SAMPLE ID	TRIP BLANKS	DATE RECEIVED:	09/18/2014
		COLLECTION DATE:	9/16/2014 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/19/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/19/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/19/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
TFT	NWTPH-GX	121	09/24/2014	DLC
1,2-Dichloroethane-d4	EPA-8260	99.5	09/19/2014	DLC
Toluene-d8	EPA-8260	100	09/19/2014	DLC
4-Bromofluorobenzene	EPA-8260	97.9	09/19/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-092014W - Batch 86289 - Water by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/20/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-092014W2 - Batch 86290 - Water by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	09/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	09/21/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-092214W - Batch 86355 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	ug/L	09/23/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-092514W - Batch 86470 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	130	1	ug/L	09/26/2014	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	ug/L	09/26/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091814W - Batch 86222 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/18/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-091814W - Batch 86222 - Water by EPA-8260

1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/18/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/18/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/18/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/18/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/18/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/18/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091814W - Batch 86222 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/18/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/18/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/18/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091814W2 - Batch 86223 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	ug/L	09/19/2014	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Tetrachloride	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Acetone	EPA-8260	U	25	1	ug/L	09/19/2014	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Methylene Chloride	EPA-8260	U	5.0	1	ug/L	09/19/2014	DLC
Acrylonitrile	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-091814W2 - Batch 86223 - Water by EPA-8260

Bromochloromethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Chloroform	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Trichloroethene	EPA-8260	U	0.020	1	ug/L	09/19/2014	DLC
1,2-Dichloropropane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	09/19/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Dibromochloromethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2-Dibromoethane	EPA-8260	U	0.01	1	ug/L	09/19/2014	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	09/19/2014	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	09/19/2014	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091814W2 - Batch 86223 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	ug/L	09/19/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.10	1	ug/L	09/19/2014	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
Naphthalene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	09/19/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091914W - Batch 86306 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.030	1	ug/L	09/23/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.026	1	ug/L	09/23/2014	GAP
Fluorene	EPA-8270 SIM	U	0.042	1	ug/L	09/23/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.23	1	ug/L	09/23/2014	GAP
Phenanthrene	EPA-8270 SIM	U	0.022	1	ug/L	09/23/2014	GAP
Anthracene	EPA-8270 SIM	U	0.027	1	ug/L	09/23/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.024	1	ug/L	09/23/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.013	1	ug/L	09/23/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/23/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-092214W - Batch 86305 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-092214W - Batch 86305 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Acenaphthylene	EPA-8270 SIM	U	0.030	1	ug/L	09/26/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.026	1	ug/L	09/26/2014	GAP
Fluorene	EPA-8270 SIM	U	0.042	1	ug/L	09/26/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.23	1	ug/L	09/26/2014	GAP
Phenanthrene	EPA-8270 SIM	U	0.022	1	ug/L	09/26/2014	GAP
Anthracene	EPA-8270 SIM	U	0.027	1	ug/L	09/26/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.024	1	ug/L	09/26/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.013	1	ug/L	09/26/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/26/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-092314W - Batch 86307 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	0.030	1	ug/L	09/29/2014	GAP
Acenaphthene	EPA-8270 SIM	U	0.026	1	ug/L	09/29/2014	GAP
Fluorene	EPA-8270 SIM	U	0.042	1	ug/L	09/29/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.23	1	ug/L	09/29/2014	GAP
Phenanthrene	EPA-8270 SIM	U	0.022	1	ug/L	09/29/2014	GAP
Anthracene	EPA-8270 SIM	U	0.027	1	ug/L	09/29/2014	GAP
Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.024	1	ug/L	09/29/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.013	1	ug/L	09/29/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	ug/L	09/29/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-092314W - Batch 86307 - Water by EPA-8270 SIM

U - Analyte analyzed for but not detected at level above reporting limit.

MB-091714W - Batch 86189 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Pyridine	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/19/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/19/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/19/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-091714W - Batch 86189 - Water by EPA-8270

2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/19/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/19/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/19/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/19/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/19/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-092314W - Batch 86304 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	09/24/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	09/24/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-092314W - Batch 86304 - Water by EPA-8270

1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	09/24/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Naphthalene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Chloroaniline	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Hexachlorobutadiene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Methylnaphthalene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Acenaphthylene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	09/24/2014	GAP
Acenaphthene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	09/24/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	09/24/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	09/24/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Fluorene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-092314W - Batch 86304 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Azobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Hexachlorobenzene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Phenanthrene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Anthracene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Fluoranthene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Chrysene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	ug/L	09/24/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-10/06/2014 - Batch R242764 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1221	EPA-8082	U	0.01	1	ug/L	10/06/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	10/06/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-09/30/2014 - Batch R242770 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
G-BHC	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
B-BHC	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
Heptachlor	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB1-09/30/2014 - Batch R242770 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
D-BHC	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
Aldrin	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
Chlordane	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
Endosulfan I	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
4,4'-DDE	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
Dieldrin	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
Endrin	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
4,4'-DDD	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
Endosulfan II	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
4,4'-DDT	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
Methoxychlor	EPA-8081	U	0.01	1	ug/L	09/30/2014	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	09/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-10/01/2014 - Batch R242770 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
G-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
B-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Heptachlor	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
D-BHC	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Aldrin	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Chlordane	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endosulfan I	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
4,4'-DDE	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Dieldrin	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endrin	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
4,4'-DDD	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endosulfan II	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
4,4'-DDT	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Methoxychlor	EPA-8081	U	0.01	1	ug/L	10/01/2014	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	10/01/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB1-10/01/2014 - Batch R242770 - Water by EPA-8081

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9182014 - Batch R242334 - Water by EPA-7196

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI)	EPA-7196	U	10	1	ug/L	09/18/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9182014 - Batch R242338 - Water by EPA-7196

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) (Dissolved)	EPA-7196	U	10	1	ug/L	09/18/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9202014 - Batch R241344 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	09/20/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9222014 - Batch R241349 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	09/22/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9182014 - Batch R242796 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	09/18/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	09/18/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/18/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/18/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	09/18/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9222014 - Batch R242804 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	09/22/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MBLK-9222014 - Batch R242804 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	09/22/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	09/22/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	09/22/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9242014 - Batch R241808 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9242014 - Batch R242345 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.20	1	ug/L	09/24/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9252014 - Batch R242379 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-9252014 - Batch R242390 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	09/25/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-092314W - Batch 86301 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	1.0	1	ug/L	09/24/2014	RAL
Barium	EPA-200.8	U	1.0	1	ug/L	09/24/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/24/2014	RAL
Calcium	EPA-200.8	U	100	1	ug/L	09/24/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/24/2014	RAL
Iron	EPA-200.8	U	50	1	ug/L	09/24/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/24/2014	RAL
Magnesium	EPA-200.8	U	50	1	ug/L	09/24/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB-092314W - Batch 86301 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Manganese	EPA-200.8	U	2.0	1	ug/L	09/24/2014	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	09/24/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/24/2014	RAL
Sodium	EPA-200.8	U	50	1	ug/L	09/24/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-092014W - Batch 86204 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Barium	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Calcium	EPA-200.8	U	100	1	ug/L	09/26/2014	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	09/26/2014	RAL
Iron	EPA-200.8	U	50	1	ug/L	09/26/2014	RAL
Lead	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Magnesium	EPA-200.8	U	50	1	ug/L	09/26/2014	RAL
Manganese	EPA-200.8	U	2.0	1	ug/L	09/26/2014	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	09/26/2014	RAL
Silver	EPA-200.8	U	1.0	1	ug/L	09/26/2014	RAL
Sodium	EPA-200.8	U	50	1	ug/L	09/26/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-092314W - Batch 86302 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/24/2014	RAL
Barium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/24/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/24/2014	RAL
Calcium (Dissolved)	EPA-200.8	U	100	1	ug/L	09/24/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/24/2014	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	09/24/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/24/2014	RAL
Magnesium (Dissolved)	EPA-200.8	U	50	1	ug/L	09/24/2014	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/24/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/24/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/24/2014	RAL
Sodium (Dissolved)	EPA-200.8	U	50	1	ug/L	09/24/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB2-092014W - Batch 86205 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Barium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Calcium (Dissolved)	EPA-200.8	U	100	1	ug/L	09/29/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	09/29/2014	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Magnesium (Dissolved)	EPA-200.8	U	50	1	ug/L	09/29/2014	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	09/29/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	09/29/2014	RAL
Silver (Dissolved)	EPA-200.8	U	1.0	1	ug/L	09/29/2014	RAL
Sodium (Dissolved)	EPA-200.8	U	50	1	ug/L	09/29/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-09/23/2014 - Batch R242762 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	09/23/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB2-09/23/2014 - Batch R242762 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	09/23/2014	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	09/23/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-09/30/2014 - Batch R242763 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	09/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB2-09/30/2014 - Batch R242763 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	09/30/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY BLANK RESULTS

MB2-09/30/2014 - Batch R242763 - Water by EPA-350.1

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-09/22/2014 - Batch R242757 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	09/22/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB2-09/23/2014 - Batch R242757 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	09/23/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB3-09/26/2014 - Batch R242757 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	09/26/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 86355 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	110			09/23/2014	DLC
TPH-Volatile Range - BSD	NWTPH-GX	110	0		09/23/2014	DLC

ALS Test Batch ID: 86470 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	97.0			09/26/2014	EBS
TPH-Diesel Range - BSD	NWTPH-DX	92.0	5		09/26/2014	EBS

ALS Test Batch ID: 86222 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	108			09/18/2014	DLC
1,1-Dichloroethene - BSD	EPA-8260	104	4		09/18/2014	DLC
Benzene - BS	EPA-8260	104			09/18/2014	DLC
Benzene - BSD	EPA-8260	102	2		09/18/2014	DLC
Trichloroethene - BS	EPA-8260	103			09/18/2014	DLC
Trichloroethene - BSD	EPA-8260	101	2		09/18/2014	DLC
Toluene - BS	EPA-8260	105			09/18/2014	DLC
Toluene - BSD	EPA-8260	102	3		09/18/2014	DLC
Chlorobenzene - BS	EPA-8260	110			09/18/2014	DLC
Chlorobenzene - BSD	EPA-8260	107	2		09/18/2014	DLC

ALS Test Batch ID: 86223 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	107			09/19/2014	DLC
1,1-Dichloroethene - BSD	EPA-8260	113	5		09/19/2014	DLC
Benzene - BS	EPA-8260	107			09/19/2014	DLC
Benzene - BSD	EPA-8260	107	1		09/19/2014	DLC
Trichloroethene - BS	EPA-8260	107			09/19/2014	DLC
Trichloroethene - BSD	EPA-8260	107	0		09/19/2014	DLC
Toluene - BS	EPA-8260	103			09/19/2014	DLC
Toluene - BSD	EPA-8260	106	2		09/19/2014	DLC
Chlorobenzene - BS	EPA-8260	107			09/19/2014	DLC
Chlorobenzene - BSD	EPA-8260	111	4		09/19/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. **DATE:** 10/16/2014
 130 - 2nd Ave. S. **ALS SDG#:** EV14090107
 Edmonds, WA 98020 **WDOE ACCREDITATION:** C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 86305 - Water by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	EPA-8270 SIM	65.4			09/26/2014	GAP
Naphthalene - BSD	EPA-8270 SIM	63.4	3		09/26/2014	GAP
Acenaphthene - BS	EPA-8270 SIM	79.0			09/26/2014	GAP
Acenaphthene - BSD	EPA-8270 SIM	73.6	7		09/26/2014	GAP
Pentachlorophenol - BS	EPA-8270 SIM	148			09/26/2014	GAP
Pentachlorophenol - BSD	EPA-8270 SIM	144	3		09/26/2014	GAP
Pyrene - BS	EPA-8270 SIM	94.6			09/26/2014	GAP
Pyrene - BSD	EPA-8270 SIM	98.6	4		09/26/2014	GAP
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	73.6			09/26/2014	GAP
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	73.9	0		09/26/2014	GAP

ALS Test Batch ID: 86189 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	32.8			09/19/2014	GAP
Phenol - BSD	EPA-8270	31.7	3		09/19/2014	GAP
2-Chlorophenol - BS	EPA-8270	78.7			09/19/2014	GAP
2-Chlorophenol - BSD	EPA-8270	80.5	2		09/19/2014	GAP
1,4-Dichlorobenzene - BS	EPA-8270	44.5			09/19/2014	GAP
1,4-Dichlorobenzene - BSD	EPA-8270	45.4	2		09/19/2014	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	88.4			09/19/2014	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	96.1	8		09/19/2014	GAP
1,2,4-Trichlorobenzene - BS	EPA-8270	42.9			09/19/2014	GAP
1,2,4-Trichlorobenzene - BSD	EPA-8270	43.7	2		09/19/2014	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	74.0			09/19/2014	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	79.7	7		09/19/2014	GAP
Acenaphthene - BS	EPA-8270	77.4			09/19/2014	GAP
Acenaphthene - BSD	EPA-8270	83.8	8		09/19/2014	GAP
4-Nitrophenol - BS	EPA-8270	26.2			09/19/2014	GAP
4-Nitrophenol - BSD	EPA-8270	26.4	1		09/19/2014	GAP
2,4-Dinitrotoluene - BS	EPA-8270	71.3			09/19/2014	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	78.3	9		09/19/2014	GAP
Pyrene - BS	EPA-8270	101			09/19/2014	GAP
Pyrene - BSD	EPA-8270	105	4		09/19/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 86304 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	27.0			09/24/2014	GAP
Phenol - BSD	EPA-8270	31.2	14		09/24/2014	GAP
2-Chlorophenol - BS	EPA-8270	78.1			09/24/2014	GAP
2-Chlorophenol - BSD	EPA-8270	91.4	16		09/24/2014	GAP
1,4-Dichlorobenzene - BS	EPA-8270	57.4			09/24/2014	GAP
1,4-Dichlorobenzene - BSD	EPA-8270	56.8	1		09/24/2014	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	83.1			09/24/2014	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	97.2	16		09/24/2014	GAP
1,2,4-Trichlorobenzene - BS	EPA-8270	61.2			09/24/2014	GAP
1,2,4-Trichlorobenzene - BSD	EPA-8270	60.6	1		09/24/2014	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	83.6			09/24/2014	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	92.8	10		09/24/2014	GAP
Acenaphthene - BS	EPA-8270	92.1			09/24/2014	GAP
Acenaphthene - BSD	EPA-8270	98.9	7		09/24/2014	GAP
4-Nitrophenol - BS	EPA-8270	21.0			09/24/2014	GAP
4-Nitrophenol - BSD	EPA-8270	18.2	14		09/24/2014	GAP
2,4-Dinitrotoluene - BS	EPA-8270	69.0			09/24/2014	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	75.4	9		09/24/2014	GAP
Pyrene - BS	EPA-8270	154		SQ1	09/24/2014	GAP
Pyrene - BSD	EPA-8270	165	7	SQ1	09/24/2014	GAP

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

ALS Test Batch ID: R242764 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	76.5			10/06/2014	CAS
PCB-1016 - BSD	EPA-8082	82.0	7		10/06/2014	CAS
PCB-1260 - BS	EPA-8082	104		SQ1	10/06/2014	CAS
PCB-1260 - BSD	EPA-8082	106	1	SQ1	10/06/2014	CAS

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

ALS Test Batch ID: R242770 - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	83.5			09/30/2014	CAS
A-BHC - BS	EPA-8081	78.5			10/01/2014	CAS
A-BHC - BSD	EPA-8081	79.0	6		09/30/2014	CAS
A-BHC - BSD	EPA-8081	74.5	5		10/01/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
G-BHC - BS	EPA-8081	81.0			09/30/2014	CAS
G-BHC - BS	EPA-8081	76.0			10/01/2014	CAS
G-BHC - BSD	EPA-8081	72.5	5		10/01/2014	CAS
G-BHC - BSD	EPA-8081	76.5	6		09/30/2014	CAS
B-BHC - BS	EPA-8081	70.5			10/01/2014	CAS
B-BHC - BS	EPA-8081	77.0			09/30/2014	CAS
B-BHC - BSD	EPA-8081	68.0	4		10/01/2014	CAS
B-BHC - BSD	EPA-8081	71.5	7		09/30/2014	CAS
Heptachlor - BS	EPA-8081	76.0			09/30/2014	CAS
Heptachlor - BS	EPA-8081	71.0			10/01/2014	CAS
Heptachlor - BSD	EPA-8081	67.0	6		10/01/2014	CAS
Heptachlor - BSD	EPA-8081	70.5	8		09/30/2014	CAS
D-BHC - BS	EPA-8081	90.0			09/30/2014	CAS
D-BHC - BS	EPA-8081	83.0			10/01/2014	CAS
D-BHC - BSD	EPA-8081	80.5	3		10/01/2014	CAS
D-BHC - BSD	EPA-8081	84.0	7		09/30/2014	CAS
Aldrin - BS	EPA-8081	71.5			09/30/2014	CAS
Aldrin - BS	EPA-8081	63.5			10/01/2014	CAS
Aldrin - BSD	EPA-8081	65.0	10		09/30/2014	CAS
Aldrin - BSD	EPA-8081	60.0	6		10/01/2014	CAS
Heptachlor Epoxide - BS	EPA-8081	79.0			09/30/2014	CAS
Heptachlor Epoxide - BS	EPA-8081	74.5			10/01/2014	CAS
Heptachlor Epoxide - BSD	EPA-8081	74.5	6		09/30/2014	CAS
Heptachlor Epoxide - BSD	EPA-8081	72.5	3		10/01/2014	CAS
Chlordane - BS	EPA-8081	73.5			10/01/2014	CAS
Chlordane - BS	EPA-8081	78.0			09/30/2014	CAS
Chlordane - BSD	EPA-8081	72.0	2		10/01/2014	CAS
Chlordane - BSD	EPA-8081	74.0	5		09/30/2014	CAS
Endosulfan I - BS	EPA-8081	60.5			09/30/2014	CAS
Endosulfan I - BS	EPA-8081	51.5			10/01/2014	CAS
Endosulfan I - BSD	EPA-8081	50.5	2		10/01/2014	CAS
Endosulfan I - BSD	EPA-8081	55.5	9		09/30/2014	CAS
4,4'-DDE - BS	EPA-8081	76.5			10/01/2014	CAS
4,4'-DDE - BS	EPA-8081	81.0			09/30/2014	CAS
4,4'-DDE - BSD	EPA-8081	76.0	6		09/30/2014	CAS
4,4'-DDE - BSD	EPA-8081	75.0	2		10/01/2014	CAS
Dieldrin - BS	EPA-8081	82.5			09/30/2014	CAS
Dieldrin - BS	EPA-8081	77.5			10/01/2014	CAS
Dieldrin - BSD	EPA-8081	77.0	7		09/30/2014	CAS



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 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Dieldrin - BSD	EPA-8081	76.0	2		10/01/2014	CAS
Endrin - BS	EPA-8081	88.5			09/30/2014	CAS
Endrin - BS	EPA-8081	81.5			10/01/2014	CAS
Endrin - BSD	EPA-8081	83.5	6		09/30/2014	CAS
Endrin - BSD	EPA-8081	80.0	2		10/01/2014	CAS
4,4'-DDD - BS	EPA-8081	82.0			09/30/2014	CAS
4,4'-DDD - BS	EPA-8081	76.5			10/01/2014	CAS
4,4'-DDD - BSD	EPA-8081	78.0	5		09/30/2014	CAS
4,4'-DDD - BSD	EPA-8081	75.5	1		10/01/2014	CAS
Endosulfan II - BS	EPA-8081	68.5			09/30/2014	CAS
Endosulfan II - BS	EPA-8081	59.5			10/01/2014	CAS
Endosulfan II - BSD	EPA-8081	58.5	2		10/01/2014	CAS
Endosulfan II - BSD	EPA-8081	64.5	6		09/30/2014	CAS
4,4'-DDT - BS	EPA-8081	81.5			09/30/2014	CAS
4,4'-DDT - BS	EPA-8081	75.0			10/01/2014	CAS
4,4'-DDT - BSD	EPA-8081	69.5	8		10/01/2014	CAS
4,4'-DDT - BSD	EPA-8081	73.0	11		09/30/2014	CAS
Endrin Aldehyde - BS	EPA-8081	77.0			10/01/2014	CAS
Endrin Aldehyde - BS	EPA-8081	82.5			09/30/2014	CAS
Endrin Aldehyde - BSD	EPA-8081	74.5	3		10/01/2014	CAS
Endrin Aldehyde - BSD	EPA-8081	80.0	3		09/30/2014	CAS
Endosulfan Sulfate - BS	EPA-8081	82.5			10/01/2014	CAS
Endosulfan Sulfate - BS	EPA-8081	88.0			09/30/2014	CAS
Endosulfan Sulfate - BSD	EPA-8081	83.5	5		09/30/2014	CAS
Endosulfan Sulfate - BSD	EPA-8081	81.5	1		10/01/2014	CAS
Methoxychlor - BS	EPA-8081	73.0			10/01/2014	CAS
Methoxychlor - BS	EPA-8081	82.5			09/30/2014	CAS
Methoxychlor - BSD	EPA-8081	74.5	10		09/30/2014	CAS
Methoxychlor - BSD	EPA-8081	71.0	3		10/01/2014	CAS
Toxaphene - BS	EPA-8081	96.4			10/01/2014	CAS
Toxaphene - BS	EPA-8081	95.4			09/30/2014	CAS
Toxaphene - BSD	EPA-8081	96.7	1		09/30/2014	CAS
Toxaphene - BSD	EPA-8081	95.2	1		10/01/2014	CAS

ALS Test Batch ID: R242334 - Water by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) - BS	EPA-7196	99.0			09/18/2014	GAP
Chromium (VI) - BSD	EPA-7196	98.0	1		09/18/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
 130 - 2nd Ave. S. ALS SDG#: EV14090107
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R242338 - Water by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) (Dissolved) - BS	EPA-7196	99.0			09/18/2014	GAP
Chromium (VI) (Dissolved) - BSD	EPA-7196	98.0	1		09/18/2014	GAP

ALS Test Batch ID: R241344 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	100			09/20/2014	DLC

ALS Test Batch ID: R241349 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	100			09/22/2014	DLC

ALS Test Batch ID: R242796 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	94.0			09/18/2014	GAP
Chloride - BSD	EPA-300.0	95.5	2		09/18/2014	GAP
Fluoride - BS	EPA-300.0	93.5			09/18/2014	GAP
Fluoride - BSD	EPA-300.0	98.5	5		09/18/2014	GAP
Nitrate as N - BS	EPA-300.0	104			09/18/2014	GAP
Nitrate as N - BSD	EPA-300.0	106	3		09/18/2014	GAP
Nitrite as N - BS	EPA-300.0	96.0			09/18/2014	GAP
Nitrite as N - BSD	EPA-300.0	97.5	2		09/18/2014	GAP
Sulfate - BS	EPA-300.0	119			09/18/2014	GAP
Sulfate - BSD	EPA-300.0	112	6		09/18/2014	GAP

ALS Test Batch ID: R242804 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	91.5			09/22/2014	GAP
Chloride - BSD	EPA-300.0	91.0	1		09/22/2014	GAP
Fluoride - BS	EPA-300.0	90.5			09/22/2014	GAP
Fluoride - BSD	EPA-300.0	92.5	2		09/22/2014	GAP
Nitrate as N - BS	EPA-300.0	104			09/22/2014	GAP
Nitrate as N - BSD	EPA-300.0	2.16	4		09/22/2014	GAP
Nitrite as N - BS	EPA-300.0	93.5			09/22/2014	GAP
Nitrite as N - BSD	EPA-300.0	1.88	1		09/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Sulfate - BS	EPA-300.0	104			09/22/2014	GAP
Sulfate - BSD	EPA-300.0	112	7		09/22/2014	GAP

ALS Test Batch ID: R241808 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	95.0			09/24/2014	RAL
Mercury - BSD	EPA-7470	102	7		09/24/2014	RAL

ALS Test Batch ID: R242345 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	100			09/24/2014	RAL
Mercury - BSD	EPA-7470	100	0		09/24/2014	RAL

ALS Test Batch ID: R242379 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	86.0			09/25/2014	RAL
Mercury (Dissolved) - BSD	EPA-7470	103	18		09/25/2014	RAL

ALS Test Batch ID: R242390 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	102			09/25/2014	RAL
Mercury (Dissolved) - BSD	EPA-7470	101	1		09/25/2014	RAL

ALS Test Batch ID: 86204 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	102			09/26/2014	RAL
Arsenic - BSD	EPA-200.8	102	0		09/26/2014	RAL
Barium - BS	EPA-200.8	99.8			09/26/2014	RAL
Barium - BSD	EPA-200.8	103	3		09/26/2014	RAL
Cadmium - BS	EPA-200.8	100			09/26/2014	RAL
Cadmium - BSD	EPA-200.8	102	2		09/26/2014	RAL
Calcium - BS	EPA-200.8	97.6			09/26/2014	RAL
Calcium - BSD	EPA-200.8	98.7	1		09/26/2014	RAL
Chromium - BS	EPA-200.8	98.0			09/26/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. **DATE:** 10/16/2014
 130 - 2nd Ave. S. **ALS SDG#:** EV14090107
 Edmonds, WA 98020 **WDOE ACCREDITATION:** C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium - BSD	EPA-200.8	99.5	2		09/26/2014	RAL
Iron - BS	EPA-200.8	98.7			09/26/2014	RAL
Iron - BSD	EPA-200.8	100	1		09/26/2014	RAL
Lead - BS	EPA-200.8	99.0			09/26/2014	RAL
Lead - BSD	EPA-200.8	101	2		09/26/2014	RAL
Manganese - BS	EPA-200.8	99.1			09/26/2014	RAL
Manganese - BSD	EPA-200.8	99.8	1		09/26/2014	RAL
Selenium - BS	EPA-200.8	104			09/26/2014	RAL
Selenium - BSD	EPA-200.8	106	2		09/26/2014	RAL
Silver - BS	EPA-200.8	104			09/26/2014	RAL
Silver - BSD	EPA-200.8	105	0		09/26/2014	RAL
Sodium - BS	EPA-200.8	90.9			09/26/2014	RAL
Sodium - BSD	EPA-200.8	93.8	3		09/26/2014	RAL

ALS Test Batch ID: 86301 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	90.7			09/24/2014	RAL
Arsenic - BSD	EPA-200.8	97.6	7		09/24/2014	RAL
Barium - BS	EPA-200.8	91.0			09/24/2014	RAL
Barium - BSD	EPA-200.8	97.9	7		09/24/2014	RAL
Cadmium - BS	EPA-200.8	92.0			09/24/2014	RAL
Cadmium - BSD	EPA-200.8	98.4	7		09/24/2014	RAL
Calcium - BS	EPA-200.8	91.0			09/24/2014	RAL
Calcium - BSD	EPA-200.8	99.3	9		09/24/2014	RAL
Chromium - BS	EPA-200.8	90.8			09/24/2014	RAL
Chromium - BSD	EPA-200.8	98.6	8		09/24/2014	RAL
Iron - BS	EPA-200.8	90.3			09/24/2014	RAL
Iron - BSD	EPA-200.8	98.5	9		09/24/2014	RAL
Lead - BS	EPA-200.8	90.4			09/24/2014	RAL
Lead - BSD	EPA-200.8	97.2	7		09/24/2014	RAL
Magnesium - BS	EPA-200.8	90.7			09/24/2014	RAL
Magnesium - BSD	EPA-200.8	99.0	9		09/24/2014	RAL
Manganese - BS	EPA-200.8	90.7			09/24/2014	RAL
Manganese - BSD	EPA-200.8	97.8	7		09/24/2014	RAL
Selenium - BS	EPA-200.8	91.2			09/24/2014	RAL
Selenium - BSD	EPA-200.8	97.5	7		09/24/2014	RAL
Silver - BS	EPA-200.8	92.2			09/24/2014	RAL
Silver - BSD	EPA-200.8	100	8		09/24/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 10/16/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV14090107
CLIENT PROJECT:	Yakima Landfill / #1148008.010.014	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Sodium - BS	EPA-200.8	90.5			09/24/2014	RAL
Sodium - BSD	EPA-200.8	97.9	8		09/24/2014	RAL

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

ALS Test Batch ID: 86205 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	97.4			09/29/2014	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	98.6	1		09/29/2014	RAL
Barium (Dissolved) - BS	EPA-200.8	94.7			09/29/2014	RAL
Barium (Dissolved) - BSD	EPA-200.8	96.1	1		09/29/2014	RAL
Cadmium (Dissolved) - BS	EPA-200.8	95.2			09/29/2014	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	98.4	3		09/29/2014	RAL
Calcium (Dissolved) - BS	EPA-200.8	93.5			09/29/2014	RAL
Calcium (Dissolved) - BSD	EPA-200.8	95.5	2		09/29/2014	RAL
Chromium (Dissolved) - BS	EPA-200.8	95.8			09/29/2014	RAL
Chromium (Dissolved) - BSD	EPA-200.8	97.5	2		09/29/2014	RAL
Iron (Dissolved) - BS	EPA-200.8	95.4			09/29/2014	RAL
Iron (Dissolved) - BSD	EPA-200.8	97.2	2		09/29/2014	RAL
Lead (Dissolved) - BS	EPA-200.8	93.6			09/29/2014	RAL
Lead (Dissolved) - BSD	EPA-200.8	96.5	3		09/29/2014	RAL
Magnesium (Dissolved) - BS	EPA-200.8	90.5			09/29/2014	RAL
Magnesium (Dissolved) - BSD	EPA-200.8	93.2	3		09/29/2014	RAL
Manganese (Dissolved) - BS	EPA-200.8	95.9			09/29/2014	RAL
Manganese (Dissolved) - BSD	EPA-200.8	97.2	1		09/29/2014	RAL
Selenium (Dissolved) - BS	EPA-200.8	100			09/29/2014	RAL
Selenium (Dissolved) - BSD	EPA-200.8	101	1		09/29/2014	RAL
Silver (Dissolved) - BS	EPA-200.8	98.3			09/29/2014	RAL
Silver (Dissolved) - BSD	EPA-200.8	101	2		09/29/2014	RAL
Sodium (Dissolved) - BS	EPA-200.8	91.0			09/29/2014	RAL
Sodium (Dissolved) - BSD	EPA-200.8	93.0	2		09/29/2014	RAL

ALS Test Batch ID: 86302 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	90.7			09/24/2014	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	97.6	7		09/24/2014	RAL
Barium (Dissolved) - BS	EPA-200.8	91.0			09/24/2014	RAL
Barium (Dissolved) - BSD	EPA-200.8	97.9	7		09/24/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. **DATE:** 10/16/2014
 130 - 2nd Ave. S. **ALS SDG#:** EV14090107
 Edmonds, WA 98020 **WDOE ACCREDITATION:** C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved) - BS	EPA-200.8	92.0			09/24/2014	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	98.4	7		09/24/2014	RAL
Calcium (Dissolved) - BS	EPA-200.8	91.0			09/24/2014	RAL
Calcium (Dissolved) - BSD	EPA-200.8	99.3	9		09/24/2014	RAL
Chromium (Dissolved) - BS	EPA-200.8	90.8			09/24/2014	RAL
Chromium (Dissolved) - BSD	EPA-200.8	98.6	8		09/24/2014	RAL
Iron (Dissolved) - BS	EPA-200.8	90.3			09/24/2014	RAL
Iron (Dissolved) - BSD	EPA-200.8	98.5	9		09/24/2014	RAL
Lead (Dissolved) - BS	EPA-200.8	90.4			09/24/2014	RAL
Lead (Dissolved) - BSD	EPA-200.8	97.2	7		09/24/2014	RAL
Magnesium (Dissolved) - BS	EPA-200.8	90.7			09/24/2014	RAL
Magnesium (Dissolved) - BSD	EPA-200.8	99.0	9		09/24/2014	RAL
Manganese (Dissolved) - BS	EPA-200.8	90.7			09/24/2014	RAL
Manganese (Dissolved) - BSD	EPA-200.8	97.8	7		09/24/2014	RAL
Selenium (Dissolved) - BS	EPA-200.8	91.2			09/24/2014	RAL
Selenium (Dissolved) - BSD	EPA-200.8	97.5	7		09/24/2014	RAL
Silver (Dissolved) - BS	EPA-200.8	92.2			09/24/2014	RAL
Silver (Dissolved) - BSD	EPA-200.8	100	8		09/24/2014	RAL
Sodium (Dissolved) - BS	EPA-200.8	90.5			09/24/2014	RAL
Sodium (Dissolved) - BSD	EPA-200.8	97.9	8		09/24/2014	RAL

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

ALS Test Batch ID: R242762 - Water by SM2320B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total - BS	SM2320B	104			09/23/2014	CAS
Alkalinity as CaCO3, Total - BS	SM2320B	103			09/23/2014	CAS

ALS Test Batch ID: R242763 - Water by EPA-350.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N - BS	EPA-350.1	103			09/30/2014	CAS
Ammonia as N - BS	EPA-350.1	105			09/30/2014	CAS

ALS Test Batch ID: R242757 - Water by SM5310C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - BS	SM5310C	98.3			09/26/2014	CAS
Total Organic Carbon (TOC) - BS	SM5310C	97.8			09/23/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/16/2014
130 - 2nd Ave. S. ALS SDG#: EV14090107
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - BS	SM5310C	97.2			09/22/2014	CAS

CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. **DATE:** 10/16/2014
 130 - 2nd Ave. S. **ALS SDG#:** EV14090107
 Edmonds, WA 98020 **WDOE ACCREDITATION:** C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.010.014

MATRIX SPIKE RESULTS

ALS Test Batch ID: R242757 - Water

Parent Sample: MW-7-09162014

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - MS	SM5310C	3.2	25.0	28.7		102		09/22/2014	CAS

Parent Sample: MW-DUP-1-09162014

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - MS	SM5310C	1.8	25.0	27.2		102		09/23/2014	CAS

APPROVED BY



Laboratory Director



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080
- _____

EV14090107

Date 9/18/14
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Chain-of-Custody Record

Project Name <u>CLOSED LANDFILL</u> Project No. <u>1148008.010.014</u>					Testing Parameters										Turnaround Time		
Project Location/Event <u>YAKIMA, WA / 9/2014 GW SAMPLING</u>					<div style="display: flex; justify-content: space-around; font-size: small;"> Metals (Total) Metals (Dissolved) Mercury (Total) Mercury (Dissolved) Hexavalent Chromium (Total) Hexavalent Chromium (Dissolved) Chlorinated Pesticides PCBs VOCs SVOCs PAHs TPH-HCID </div>										<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____		
Sampler's Name <u>MATT MORONEY / STEPHANIE RENANDO</u>																	
Project Contact <u>JEFFREY FELLOWS</u>																	
Send Results To <u>J. FELLOWS / A. HALVORSEN</u>																	
Sample I.D.	Date	Time	Matrix	No. of Containers	Metals (Total)	Metals (Dissolved)	Mercury (Total)	Mercury (Dissolved)	Hexavalent Chromium (Total)	Hexavalent Chromium (Dissolved)	Chlorinated Pesticides	PCBs	VOCs	SVOCs	PAHs	TPH-HCID	Observations/Comments
MW-6-09172014	9/17/14	1240	AQ	8	X	X	X	X							X	X	X Allow water samples to settle, collect aliquot from clear portion
MW-7-09162014	9/16/14	0930	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	X NWTPH-Dx - run acid wash/silica gel cleanup
MW-8-09162014	9/16/14	0815	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	
MW-9A-09152014	9/15/14	1215	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	
MW-11-09152014	9/15/14	1330	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	___ run samples standardized to _____ product
MW-12-09152014	9/15/14	1430	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	___ Analyze for EPH if no specific product identified
MW-14-09172014	9/17/14	1530	AQ	8	X	X	X	X							X	X	VOC/BTEX/VPH (soil):
MW-15-09172014	9/17/14	1600	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	___ non-preserved
MW-16-09172014	9/17/14	1430	AQ	8	X	X	X	X							X	X	___ preserved w/methanol
MW-17-09172014	9/17/14	1410	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	___ preserved w/sodium bisulfate
MW-18-09152014	9/15/14	1215	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	___ Freeze upon receipt
MW-100-09162014	9/16/14	1505	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	X Dissolved metal water samples field filtered.
MW-101-09172014	9/17/14	0945	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	Other: Metals - Arsenic, Barium, Cadmium, Chromium, Lead, Iron, Manganese, Selenium, Silver, Calcium, Magnesium, Sodium.
MW-102-09162014	9/16/14	1140	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	Note: Samples for dissolved analytes are field filtered.
MW-103-09162014	9/16/14	1300	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	
MW-104-09162014	9/16/14	1420	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	
MW-105-09152014	9/15/14	1500	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	
MW-106-09162014	9/16/14	1135	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	
Special Shipment/Handling or Storage Requirements					⊗ - indicates sample already ran for analyte on previous COC										Method of Shipment <u>9/23/14 MSM Delivery on ice</u>		
Relinquished by			Received by			Relinquished by			Received by								
Signature <u>[Signature]</u>			Signature <u>Shawn Robinson</u>			Signature _____			Signature _____								
Printed Name <u>MATT MORONEY</u>			Printed Name <u>Shawn Robinson</u>			Printed Name _____			Printed Name _____								
Company <u>LANDAU ASSOCIATES</u>			Company <u>ALS</u>			Company _____			Company _____								
Date <u>09/18/14</u> Time <u>0705</u>			Date <u>9/18/14</u> Time <u>705</u>			Date _____ Time _____			Date _____ Time _____								



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 928-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080
- _____

EV14090107

Date 9/18/14
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Chain-of-Custody Record

Project Name <u>CLOSED LANDFILL</u> Project No. <u>1148008.010.014</u>					Testing Parameters					Turnaround Time			
Project Location/Event <u>TAKIMA, WA / 9/10/14 GW SAMPLING</u>					<div style="display: flex; justify-content: space-around; font-size: small;"> TPH-Dx1 TPH-G Conventional/52 Alkalinity Bicarbonate Ammonia TOC TDS </div> <p style="color: red; font-weight: bold; margin-top: 5px;">really ASM</p>					<input checked="" type="checkbox"/> Standard			
Sampler's Name <u>MATT MORONEY / STEPHANIE RENAUDO</u>										<input type="checkbox"/> Accelerated			
Project Contact <u>JEFFREY FELLOWS</u>										<input type="checkbox"/> _____			
Send Results To <u>J. FELLOWS / A. HALVORSEN</u>													
Sample I.D.	Date	Time	Matrix	No. of Containers	TPH-Dx1	TPH-G	Conventional/52	Alkalinity	Bicarbonate	Ammonia	TOC	TDS	Observations/Comments
MW-6-09172014	9/17/14	1240	AQ	8	0	0	X						X Allow water samples to settle, collect aliquot from clear portion
MW-7-09172014	9/16/14	0930	AQ	16	0	0	X	X	X	X	X	X	X NWTPH-Dx - run acid wash/silica gel cleanup
MW-8-09162014	9/16/14	0815	AQ	16	0	0	X	X	X	X	X	X	
MW-9A-09152014	9/15/14	1215	AQ	16	0	0	X	X	X	X	X	X	
MW-11-09152014	9/15/14	1330	AQ	16	0	0	X	X	X	X	X	X	run samples standardized to _____ product
MW-12-09152014	9/15/14	1430	AQ	16	0	0	X	X	X	X	X	X	Analyze for EPH if no specific product identified
MW-14-09172014	9/17/14	1530	AQ	8	0	0	X						VOC/BTEX/VPH (soil):
MW-15-09172014	9/17/14	1600	AQ	16	0	0	X	X	X	X	X	X	non-preserved
MW-16-09172014	9/17/14	1430	AQ	8	0	0	X						preserved w/methanol
MW-17-09172014	9/17/14	1410	AQ	16	0	0	X	X	X	X	X	X	preserved w/sodium bisulfate
MW-18-09152014	9/15/14	1215	AQ	16	0	0	X	X	X	X	X	X	Freeze upon receipt
MW-100-09162014	9/16/14	1505	AQ	16	0	0	X	X	X	X	X	X	Dissolved metal water samples field filtered
MW-101-09172014	9/17/14	0445	AQ	16	0	0	X	X	X	X	X	X	Other: Run dx with AND without Silica Gel Cleanup
MW-102-09162014	9/16/14	1140	AQ	16	0	0	X	X	X	X	X	X	2: Convent. anal. - Fluoride, Nitrate, Chloride, Sulfate, nitrite
MW-103-09162014	9/16/14	1300	AQ	16	0	0	X	X	X	X	X	X	0: Hold pending HCLD results
MW-104-09162014	9/16/14	1420	AQ	16	0	0	X	X	X	X	X	X	
MW-105-09152014	9/15/14	1500	AQ	16	0	0	X	X	X	X	X	X	
MW-106-09162014	9/16/14	1135	AQ	16	0	0	X	X	X	X	X	X	
Special Shipment/Handling or Storage Requirements <u>⊗ - Indicates sample already ran for analyte on previous GC</u>					Method of Shipment <u>Delivery on Ice</u>								
Relinquished by <u>[Signature]</u> Signature <u>MATT MORONEY</u> Printed Name <u>LANDAU ASSOCIATES</u> Company Date <u>9/18/14</u> Time <u>0705</u>			Received by <u>[Signature]</u> Signature <u>Shawn Robinson</u> Printed Name <u>ACS</u> Company Date <u>9/18/14</u> Time <u>2:05</u>			Relinquished by Signature Printed Name Company Date _____ Time _____			Received by Signature Printed Name Company Date _____ Time _____				

9/23/14
MSM



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080
- _____

EV14090107

Date 9/18/14
Page 3 of 4

Chain-of-Custody Record

Project Name <u>CLOSED LANDFILL</u> Project No. <u>1148008,010,014</u>					Testing Parameters										Turnaround Time													
Project Location/Event <u>YAKIMA, WA / 9/17/14 GW SAMPLING</u>					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Metals (Total)</td><td>Metals (Dissolved)</td><td>Mercury (Total)</td><td>Mercury (Dissolved)</td><td>Hexavalent Chromium (Total)</td><td>Hexavalent Chromium (Dissolved)</td><td>Chlorinated Hydrocarbons (Total)</td><td>PCBs</td><td>VOCs</td><td>SVOCs</td><td>PAHs</td><td>TPH-HCl</td> </tr> </table>										Metals (Total)	Metals (Dissolved)	Mercury (Total)	Mercury (Dissolved)	Hexavalent Chromium (Total)	Hexavalent Chromium (Dissolved)	Chlorinated Hydrocarbons (Total)	PCBs	VOCs	SVOCs	PAHs	TPH-HCl	<input checked="" type="checkbox"/> Standard	
Metals (Total)	Metals (Dissolved)	Mercury (Total)	Mercury (Dissolved)	Hexavalent Chromium (Total)											Hexavalent Chromium (Dissolved)	Chlorinated Hydrocarbons (Total)	PCBs	VOCs	SVOCs	PAHs	TPH-HCl							
Sampler's Name <u>MATT MORONEY / STEPHANE BENANDO</u>															<input type="checkbox"/> Accelerated													
Project Contact <u>JEFFREY FELLOWS</u>															<input type="checkbox"/> _____													
Send Results To <u>J. FELLOWS / A. HALVORSEN</u>																												
Sample I.D.	Date	Time	Matrix	No. of Containers	Metals (Total)	Metals (Dissolved)	Mercury (Total)	Mercury (Dissolved)	Hexavalent Chromium (Total)	Hexavalent Chromium (Dissolved)	Chlorinated Hydrocarbons (Total)	PCBs	VOCs	SVOCs	PAHs	TPH-HCl	Observations/Comments											
MW-107-09172014	9/17/14	0920	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	X Allow water samples to settle, collect aliquot from clear portion											
MW-108-09172014	9/17/14	0900	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	X NWTPH-Dx - run acid wash/silica gel cleanup											
MW-109-09162014	9/16/14	1308	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X												
TP-MW-1-09172014	9/17/14	0940	AQ	8	X	X	X	X	X	X	X	X	X	X	X	X	run samples standardized to _____ product											
TP-MW-2-09172014	9/17/14	1100	AQ	8	X	X	X	X	X	X	X	X	X	X	X	X	Analyze for EPH if no specific product identified											
FP-MW-3-09162014	9/16/14	0900	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	VOC/BTEX/VPH (soil):											
MW-DUP-1-09162014	9/16/14	0915	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	non-preserved											
MW-DUP-2-09162014	9/16/14	0735	AQ	16	X	X	X	X	X	X	X	X	X	X	X	X	preserved w/methanol											
TRIP BLANKS	—	—	AQ	2													preserved w/sodium bisulfate											
																	Freeze upon receipt											
																	Dissoled metal water samples field filtered											
																	Other Metals - Arsenic, Barium, Cadmium, Calcium, Lead, Iron, Manganese, Selenium, Silver, Calcium, Magnesium, Sodium											
																	Note - Samples for dissolved analytes are field filtered											
Special Shipment/Handling or Storage Requirements <u>Ⓢ - indicates sample already ran for analyte on previous GC 9/13/14 MSM</u>					Method of Shipment <u>Delivery on Ice</u>																							
Relinquished by			Received by			Relinquished by			Received by																			
Signature <u>Matt Moroney</u>			Signature <u>Shawn Robinson</u>			Signature _____			Signature _____																			
Printed Name <u>Matt Moroney</u>			Printed Name <u>Shawn Robinson</u>			Printed Name _____			Printed Name _____																			
Company <u>LANDAU ASSOCIATES</u>			Company <u>AIS</u>			Company _____			Company _____																			
Date <u>9/18/14</u> Time <u>0705</u>			Date <u>9/18/14</u> Time <u>7:05</u>			Date _____ Time _____			Date _____ Time _____																			



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080
- _____

EV14090107

Date 9/18/14
Page 4 of 4

Chain-of-Custody Record

Project Name <u>CLOSED LANDFILL</u> Project No. <u>1149008.010.014</u>					Testing Parameters										Turnaround Time						
Project Location/Event <u>TAKIMA WA / 9/17/14 GW SAMPLING</u>															<input checked="" type="checkbox"/> Standard						
Sampler's Name <u>MATT MORONEY/STEPHANIE RENANCO</u>															<input type="checkbox"/> Accelerated						
Project Contact <u>JEFFREY FELLOWS /</u>															<input type="checkbox"/> _____						
Send Results To <u>J. FELLOWS / A. HALVORSEN</u>																					
Sample I.D.	Date	Time	Matrix	No. of Containers	TPH-Dx	TPH-G	Conventional	Alkalinity	Bicarbonate	Ammonia	TDS	Observations/Comments									
MW-107-09172014	9/17/14	0820	AQ	16	0	0	X	X	X	X	X	X Allow water samples to settle, collect aliquot from clear portion									
MW-108-09172014	9/17/14	0900	AQ	16	0	0	X	X	X	X	X	X NWTPH-Dx - run acid wash/silica gel cleanup									
MW-109-09162014	9/16/14	1308	AQ	16	0	0	X	X	X	X	X										
TP-MW-1-09172014	9/17/14	0740	AQ	8	0	0	X	X	X	X	X										
TP-MW-2-09172014	9/17/14	1100	AQ	8	0	0	X	X	X	X	X	___ run samples standardized to _____ product									
FPP-MW-3-09162014	9/16/14	0900	AQ	16	0	0	X	X	X	X	X	___ Analyze for EPH if no specific product identified									
MW-DUP-1-09162014	9/16/14	0915	AQ	16	0	0	X	X	X	X	X	VOC/BTEX/VPH (sol):									
MW-DUP-2-09162014	9/16/14	0735	AQ	16	0	0	X	X	X	X	X	___ non-preserved									
TRIP BLANKS	---	---	AQ	2	X							___ preserved w/methanol									
												___ preserved w/sodium bisulfate									
												___ Freeze upon receipt									
												___ Dissolved metal water samples field filtered									
												Other 1- Run Dx with AND									
												without silica gel cleanup									
												2- Conventional - fluoride									
												nitrate, chloride, sulfate, nitrate									
												3- Hold pending HClO results									
Special Shipment/Handling or Storage Requirements <u>Q - Indicates sample already ran for analyte on previous CC</u>					Method of Shipment <u>MSM</u>																
Relinquished by			Received by			Relinquished by			Received by												
Signature <u>[Signature]</u>			Signature <u>Shawn Robinson</u>			Signature _____			Signature _____												
Printed Name <u>MATT MORONEY</u>			Printed Name <u>Shawn Robinson</u>			Printed Name _____			Printed Name _____												
Company <u>LANDAU ASSOCIATES</u>			Company <u>ALS</u>			Company _____			Company _____												
Date <u>09/18/14</u> Time <u>0705</u>			Date <u>9/18/14</u> Time <u>705</u>			Date _____ Time _____			Date _____ Time _____												

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: E114090107

Project: Closed Landfill / #1148008.010.014

Received Date: 9/18/14 Received Time: 7:05am By: SM

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express

	Yes	No	N/A
Were custody seals on outside of sample?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, how many? _____			
Where? _____			
Custody seal date: _____			
Seal name: _____			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: None

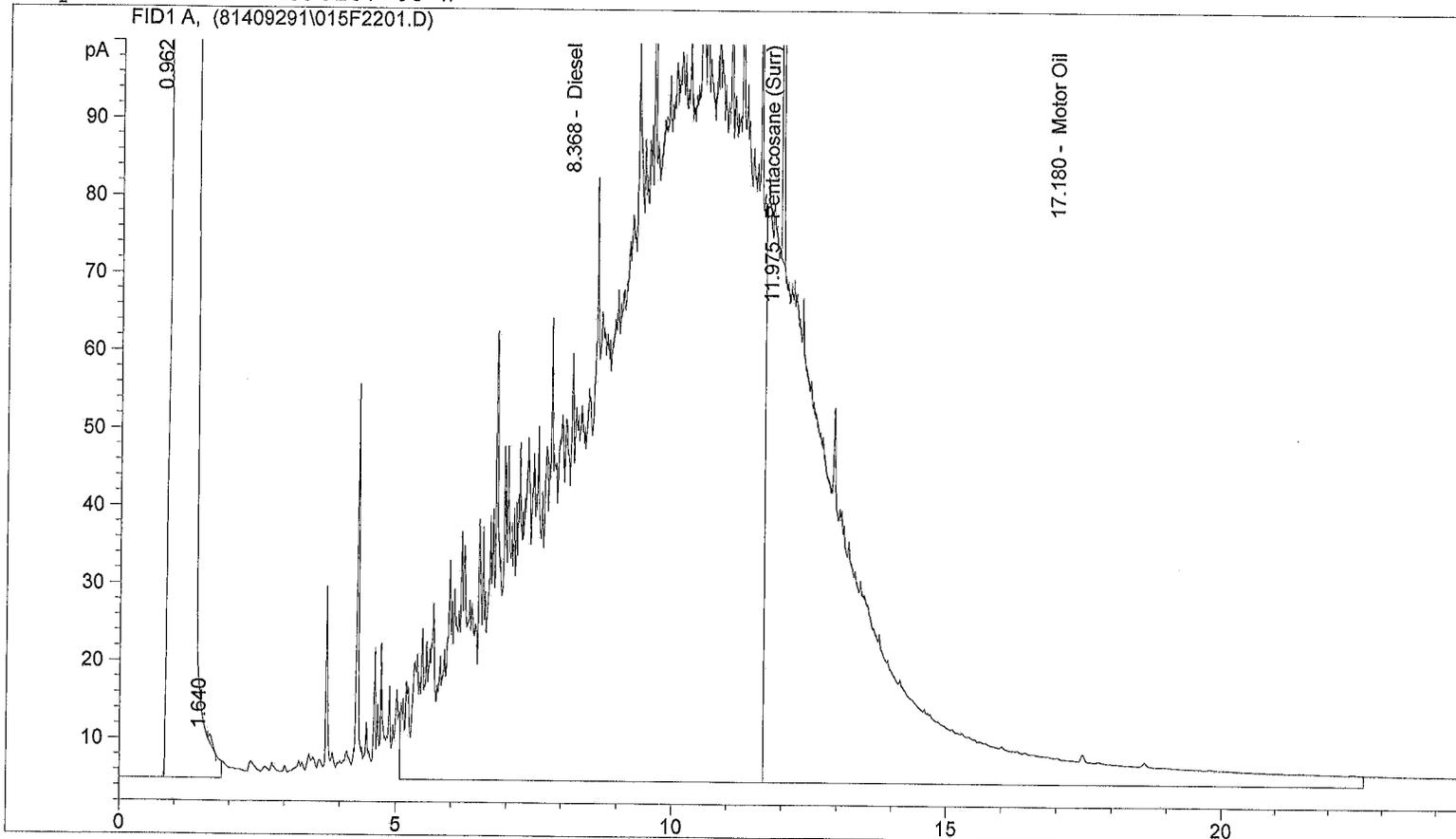
Temperature of cooler upon receipt: All coolers below 6°C on ice Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

Sample Name: EV14090107-06 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	21338.408	1842.304
11.975		Pentacosane (Surr)	968.097	39.869
17.180		Motor Oil	7782.672	716.694

100 %

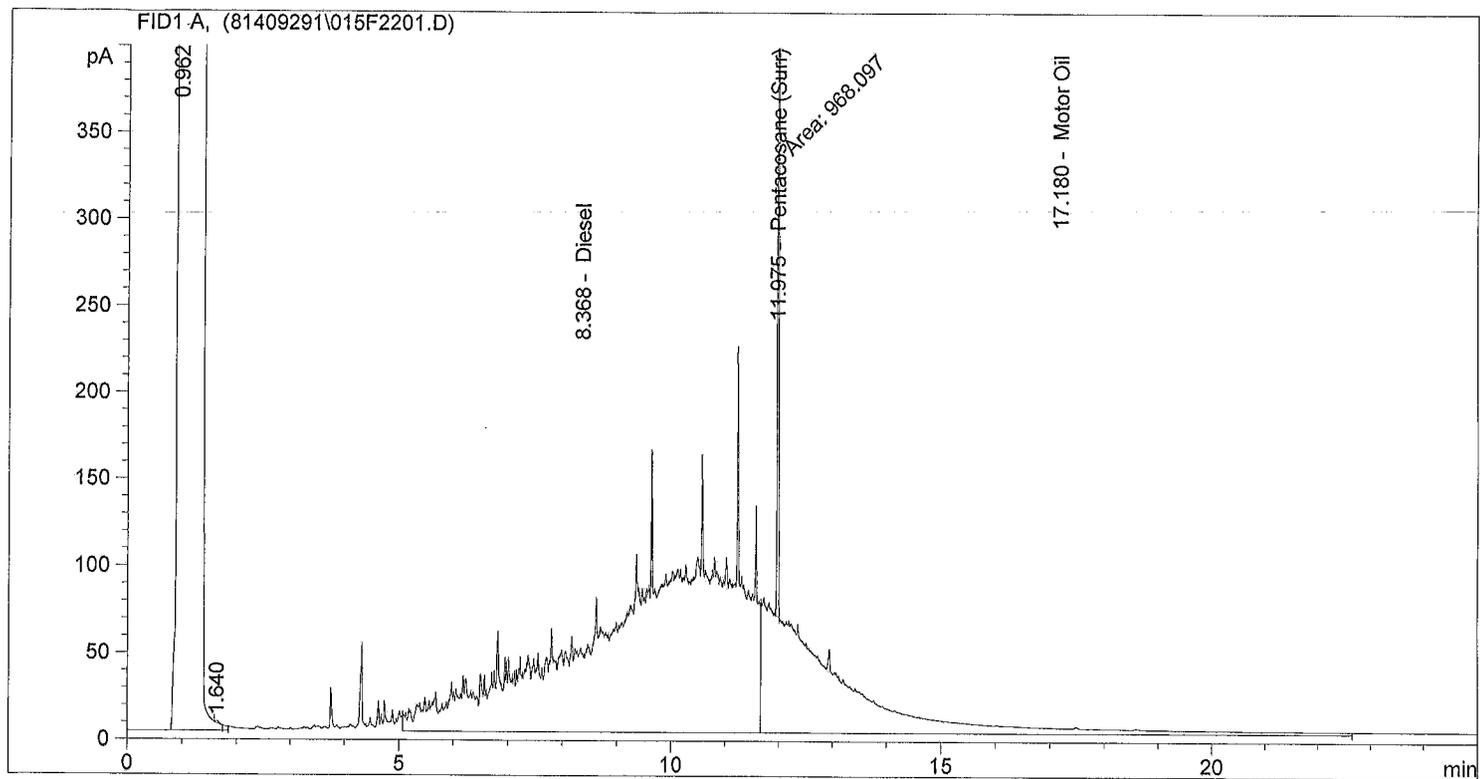
$$D = 1842.304 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 3700 \text{ ug/L}$$

$$O = 716.694 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 1400 \text{ ug/L}$$

Unidentified
 Diesel and Oil
 Range Products

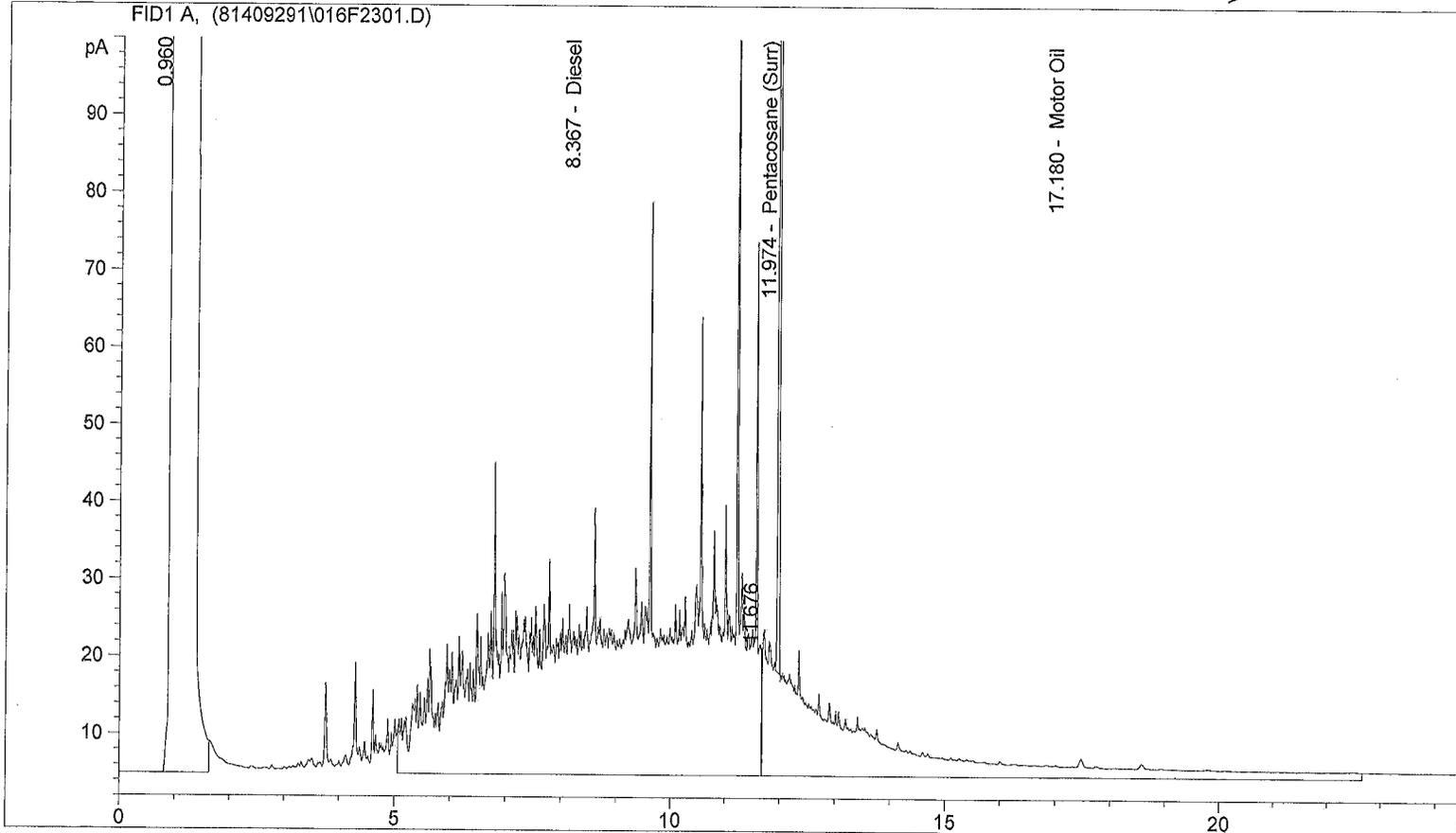
REVIEWED BY MB
 & DATE 9/30/14

09.30.14



*** End of Report ***

Sample Name: EV14090107-06 W SGA
 FID1 A, (81409291\016F2301.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.367	FID1 A,	Diesel	6751.775	582.931
11.974		Pentacosane (Surr)	1082.164	44.567
17.180		Motor Oil	1997.510	183.947

111%

$$D = 582.931 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 1200 \text{ ug/L}$$
 Unidentified Diesel and Oil Range Products

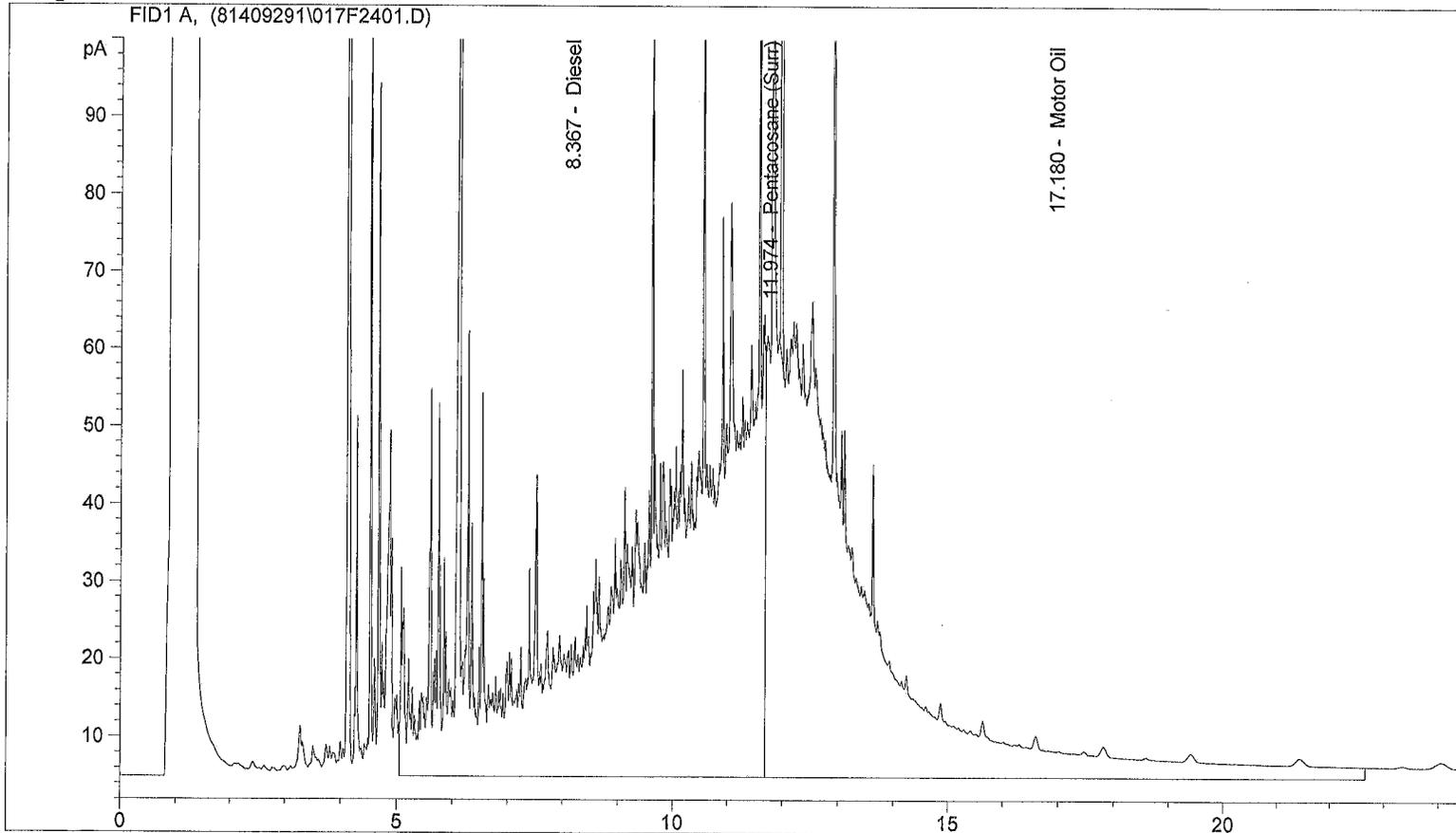
$$O = 183.947 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 370 \text{ ug/L}$$

REVIEWED BY *MB*
 & DATE *9/30/14*

09-30-14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409291\017F2401.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FDMO0914.M
 Injection Date & Time: 9/29/2014 9:12:59 PM 9/29/2014 9:12:59 PM
 Report Creation: 9/30/2014 10:58:40 AM

Sample Name: EV14090107-13 W
 FID1 A, (81409291\017F2401.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.367	FID1 A,	Diesel	10170.196	878.069
11.974		Pentacosane (Surr)	938.666	38.657
17.180		Motor Oil	7663.290	705.700

97%

$$D = 878.069 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{480 \text{ mL}} = 1800 \text{ ug/L}$$

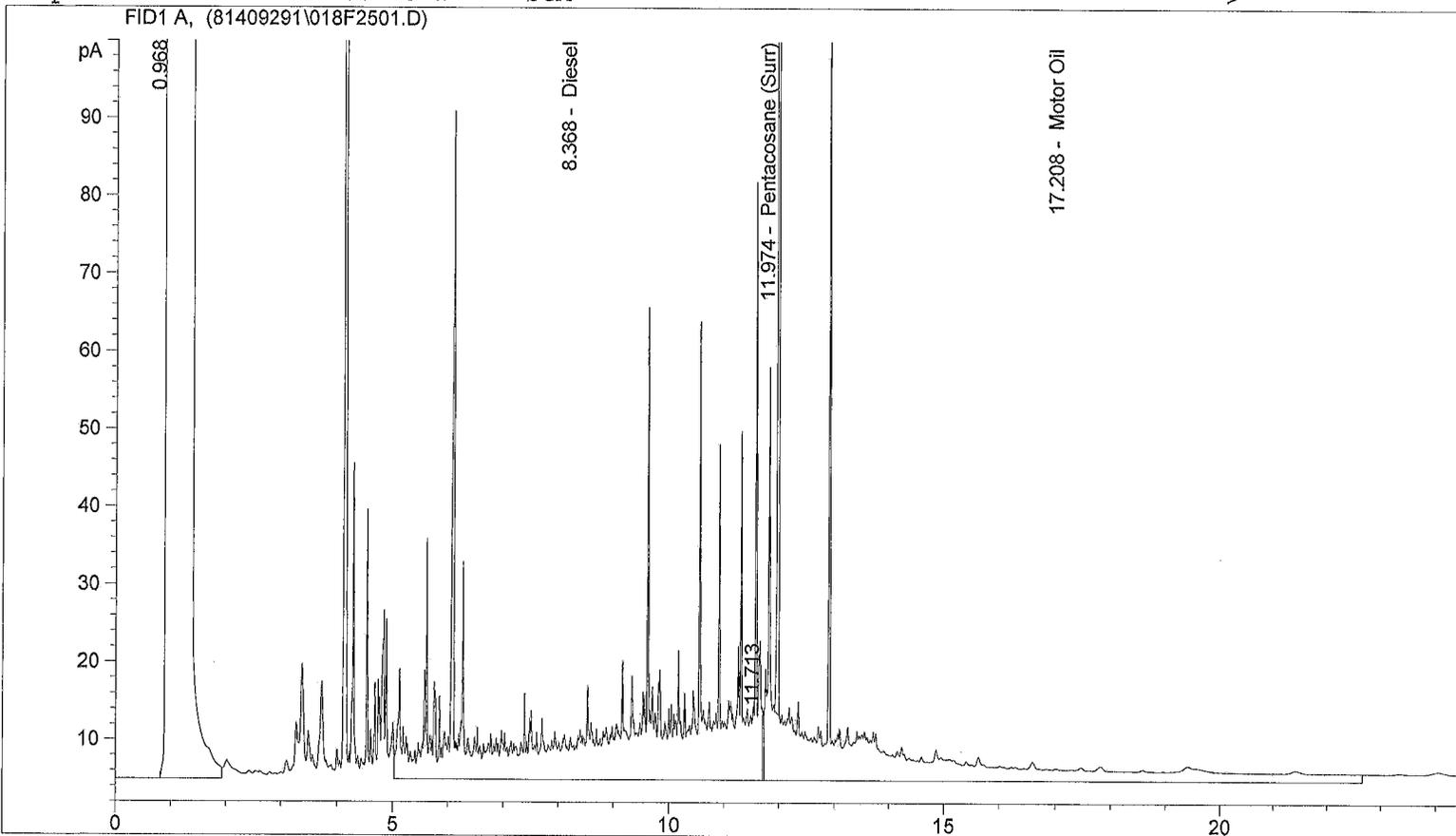
$$O = 705.700 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{480 \text{ mL}} = 1500 \text{ ug/L}$$

Unidentified Diesel and
 Oil Range Products

REVIEWED BY AB
 & DATE 9/30/14

09-30-14-ES

Sample Name: EV14090107-13 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	2875.811	248.290
11.974		Pentacosane (Surr)	973.430	40.089
17.208		Motor Oil	1883.031	173.405

100%

$$D = 248.290 \text{ } \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{480 \text{ mL}} = 520 \text{ } \mu\text{g/L}$$

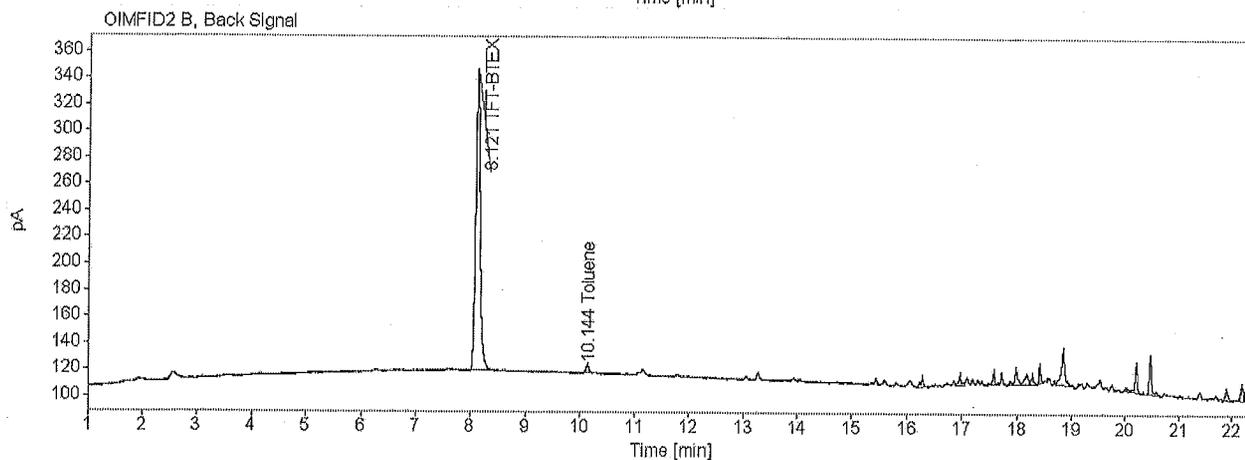
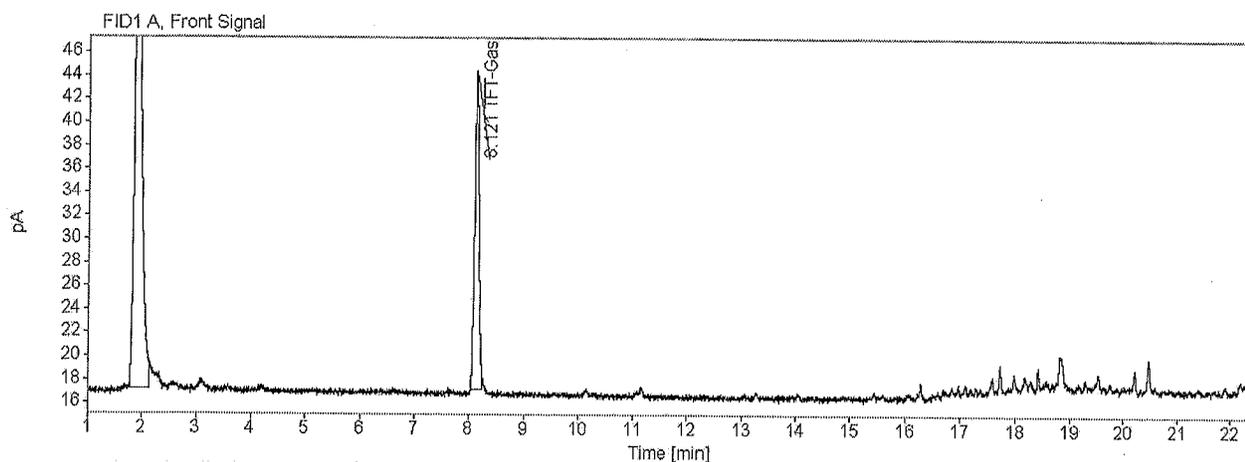
Unidentified
 Diesel and Oil
 Range Products

$$O = 173.405 \text{ } \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{173.405 \text{ mL}} = 360 \text{ } \mu\text{g/L}$$

REVIEWED BY *MS*
 & DATE *9/30/14*

09-30-14-8

Data file: C:\CHEM32\1\DATA\0924141\0924141 2014-09-24 07-27-02\010F1001.D
Sample name: EV14090107-27
Dilution: 0.000
Injection date: 9/24/2014 1:41:35 PM
Acq. method: GX_SHORTRUN.M
Acq. operator: Dorota Ciszek
Analysis method: GXB09142.M
Instrument name: GC#119

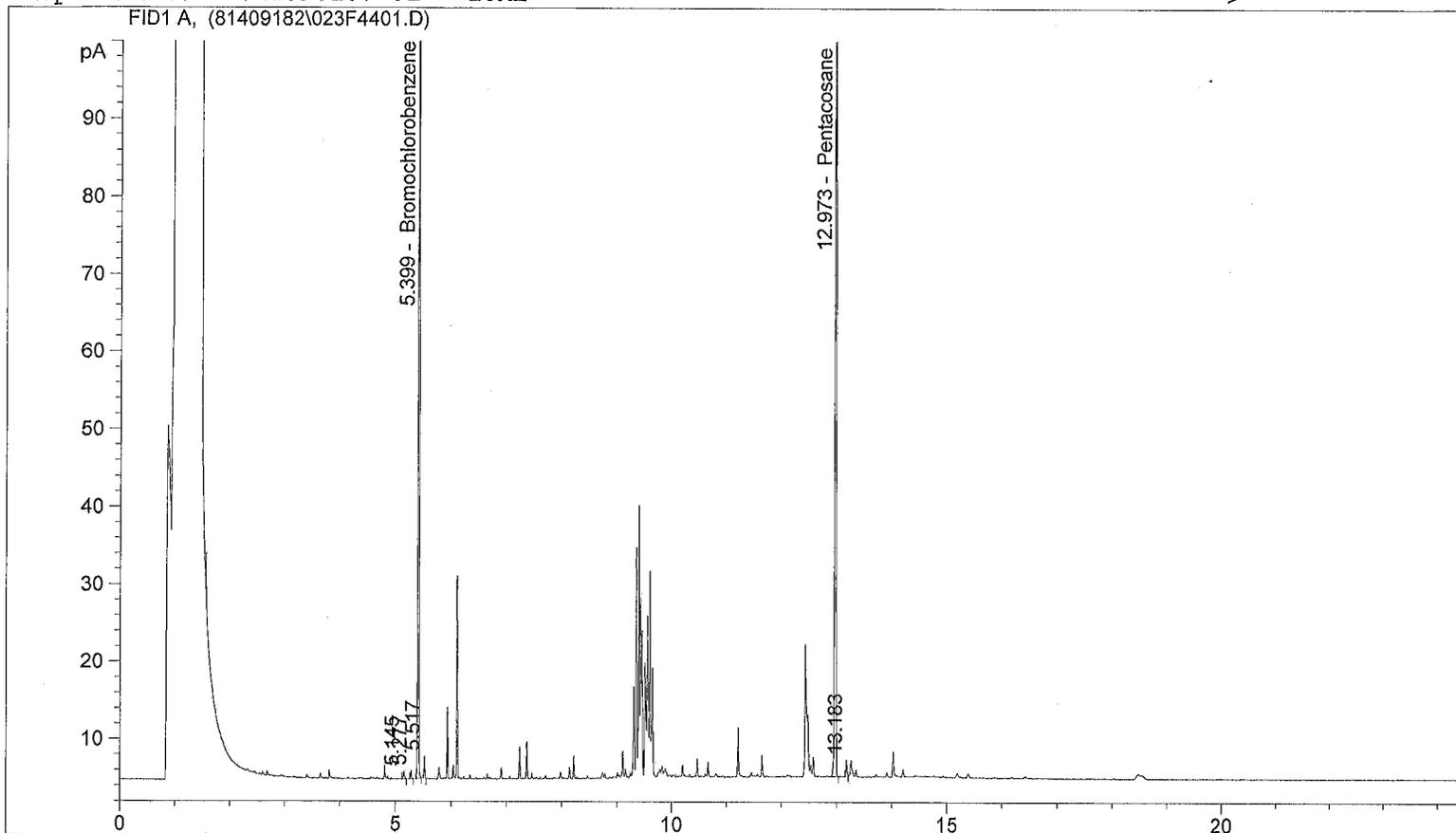


Name	Peak Area	RT [min]	Amount [ng/ul]
TFT-Gas	151.019	8.121	12.070 12.46

Name	Peak Area	RT [min]	Amount [ng/ul]
MTBE			0.000
Benzene			0.000
Ethylbenzene			0.000
M & P- Xylenes			0.000
O-Xylene			0.000
Gasoline Envelope			0.000
TFT-BTEX	1312.834	8.121	12.061
Toluene	24.439	10.144	0.067

Gas < 50 ug/l

Sample Name: EV14090107-01 10ML



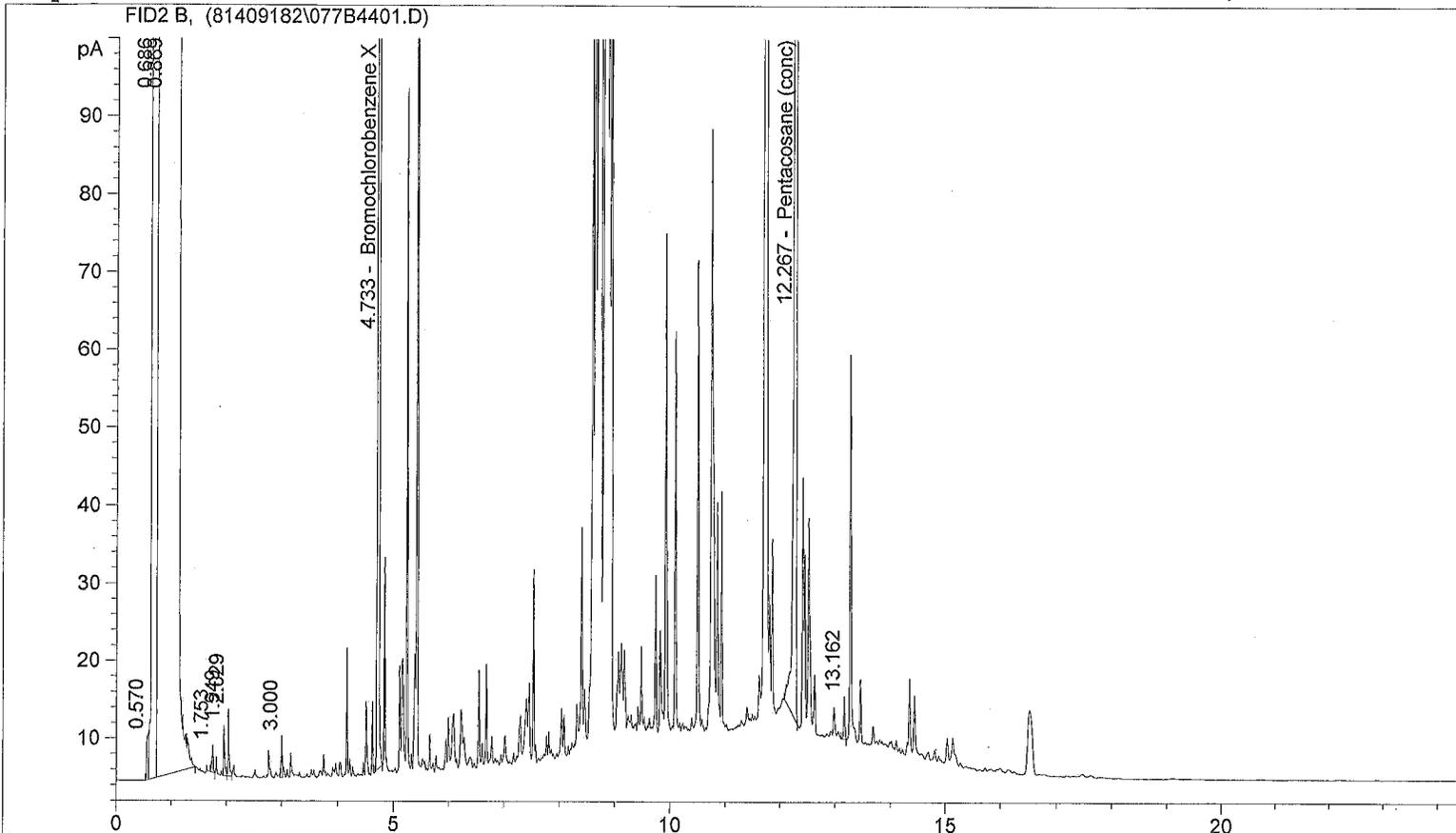
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	287.451	21.748
12.973		Pentacosane	291.801	8.962

87%
90%

G < 130 ug/L
 D < 310 ug/L

09.23.14

Sample Name: EV14090107-01 1ML



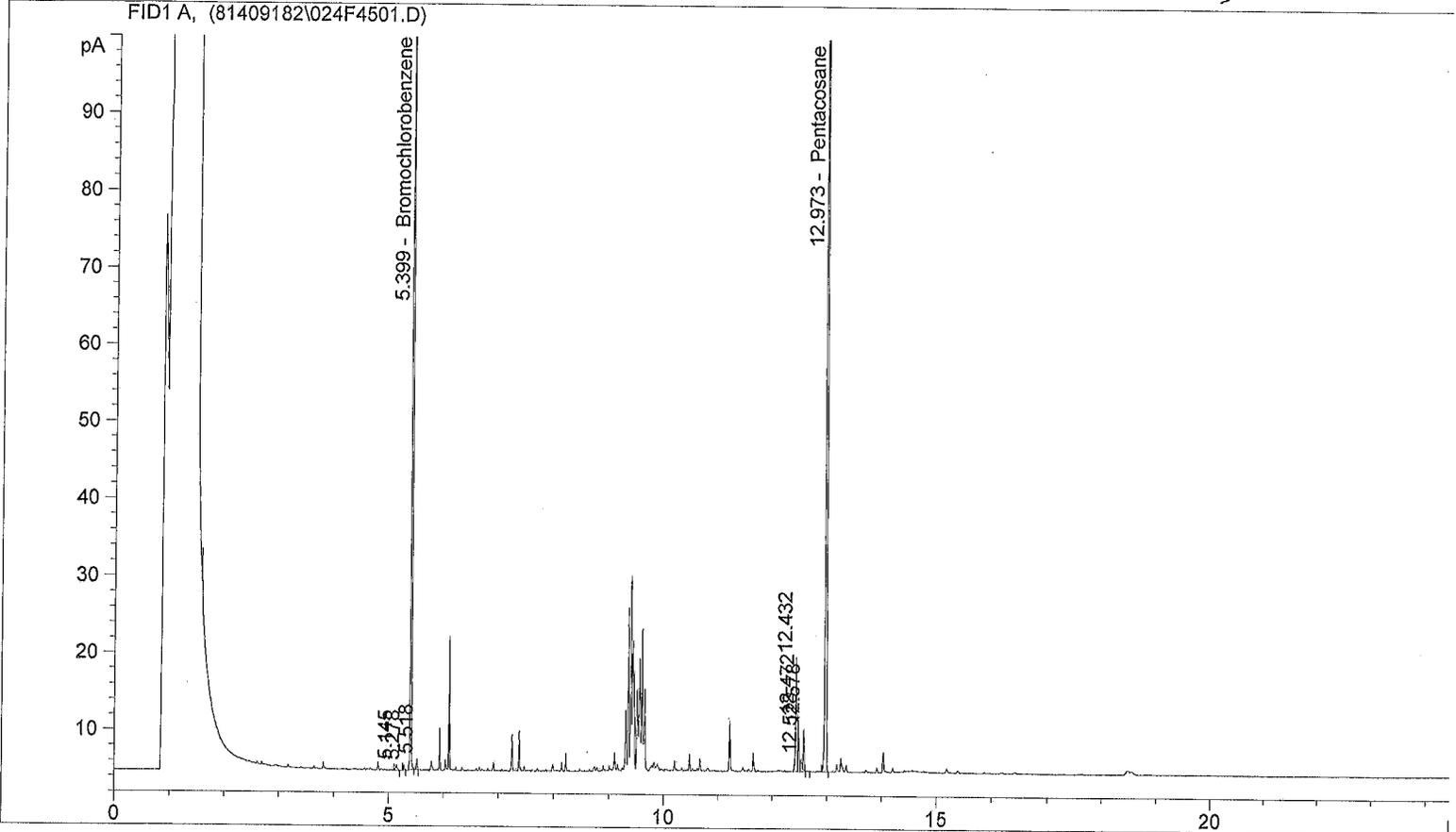
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.733	FID2 B,	Bromochlorobenzene X	3003.099	233.821
12.267		Pentacosane (conc)	3017.826	93.844

94%

0 < 310 ug/L

09-14-09-23-14ES

Sample Name: EV14090107-02 10ML



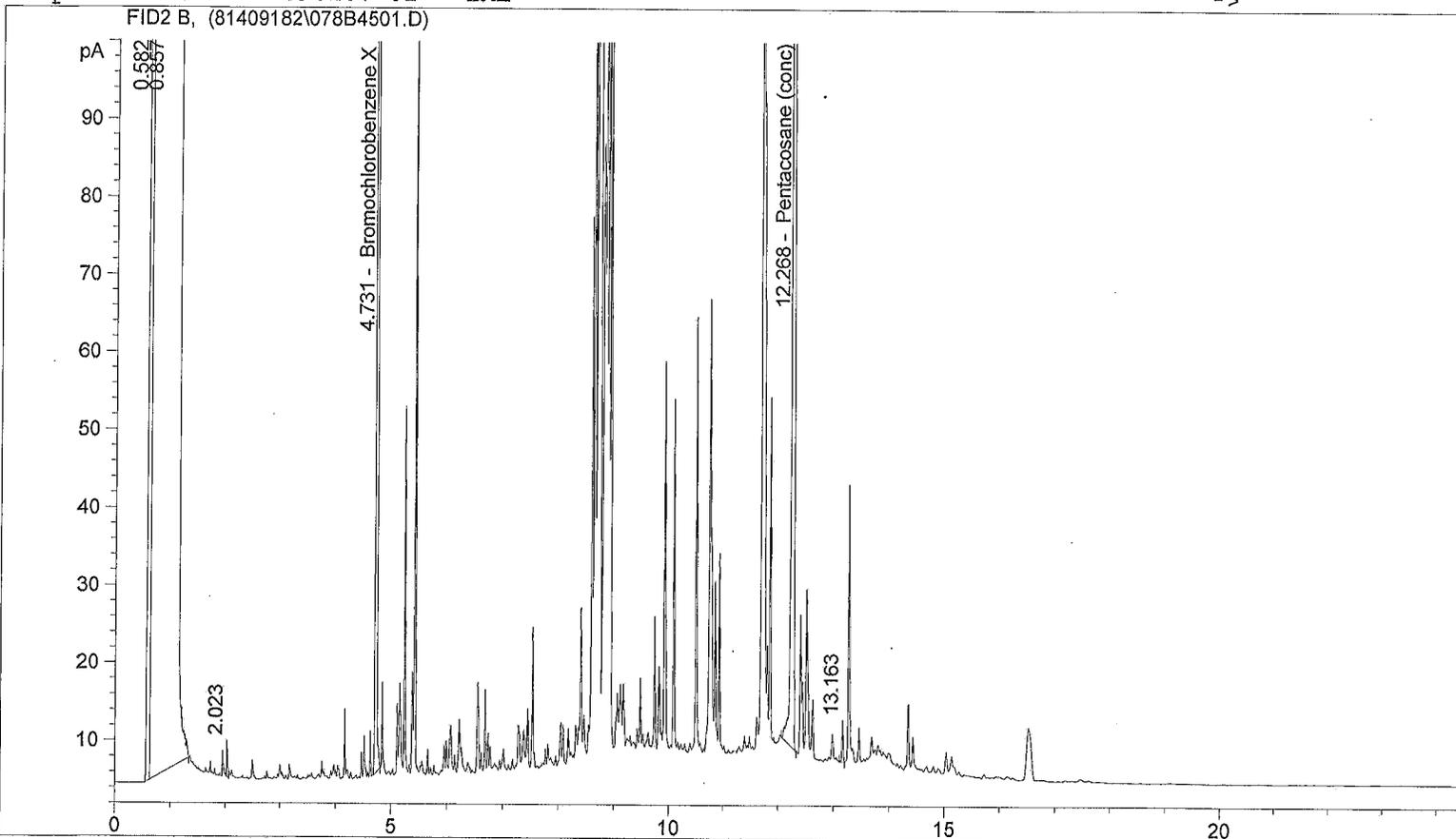
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	293.072	22.173
12.973		Pentacosane	305.564	9.384

89%
94%

B < 130 ug/L
 D < 310 ug/L

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\078B4501.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 9/20/2014 8:32:26 PM 9/20/2014 8:32:26 PM
 Report Creation: 9/23/2014 11:41:44 AM

Sample Name: EV14090107-02 1ML



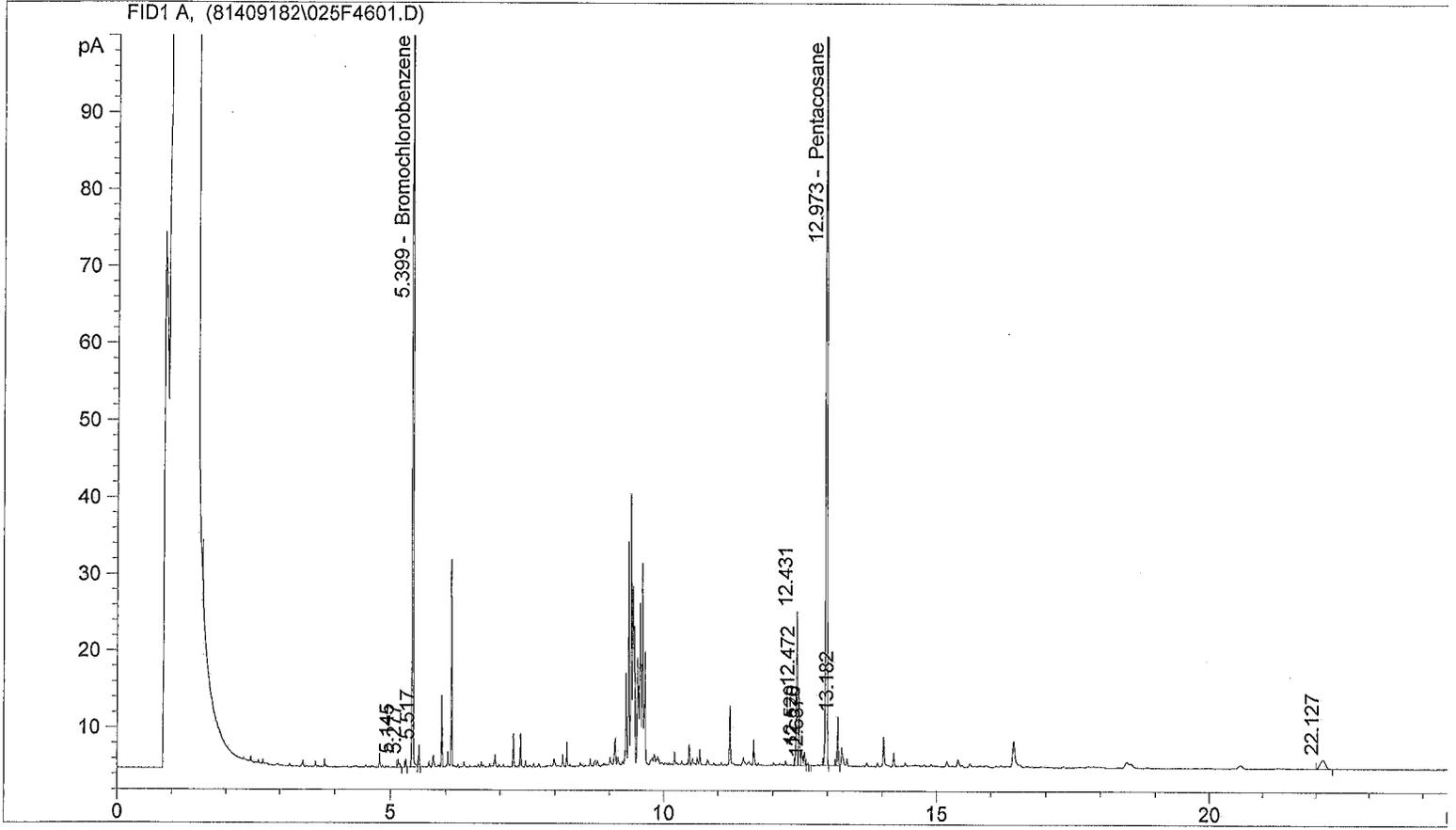
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.731	FID2 B,	Bromochlorobenzene X	2732.366	212.742
12.268		Pentacosane (conc)	2900.452	90.194

90%

0 < 3/0 g/L

09.23.14ES

Sample Name: EV14090107-03 10ML



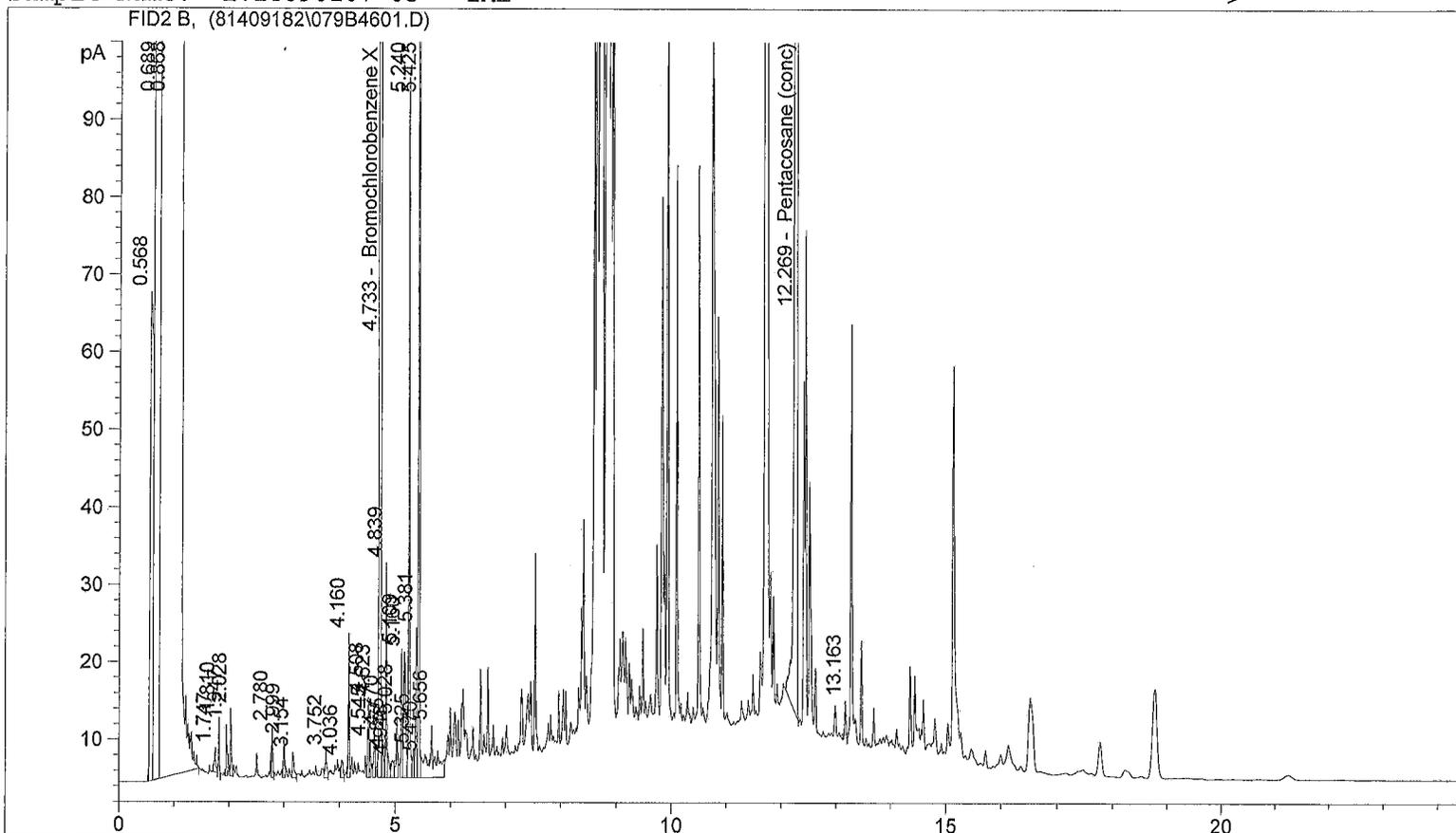
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	300.961	22.770
12.973		Pentacosane	311.925	9.580

917.
96f.

G < 130 ug/L
 D < 310 ug/L

09.23.14

Sample Name: EV14090107-03 1ML



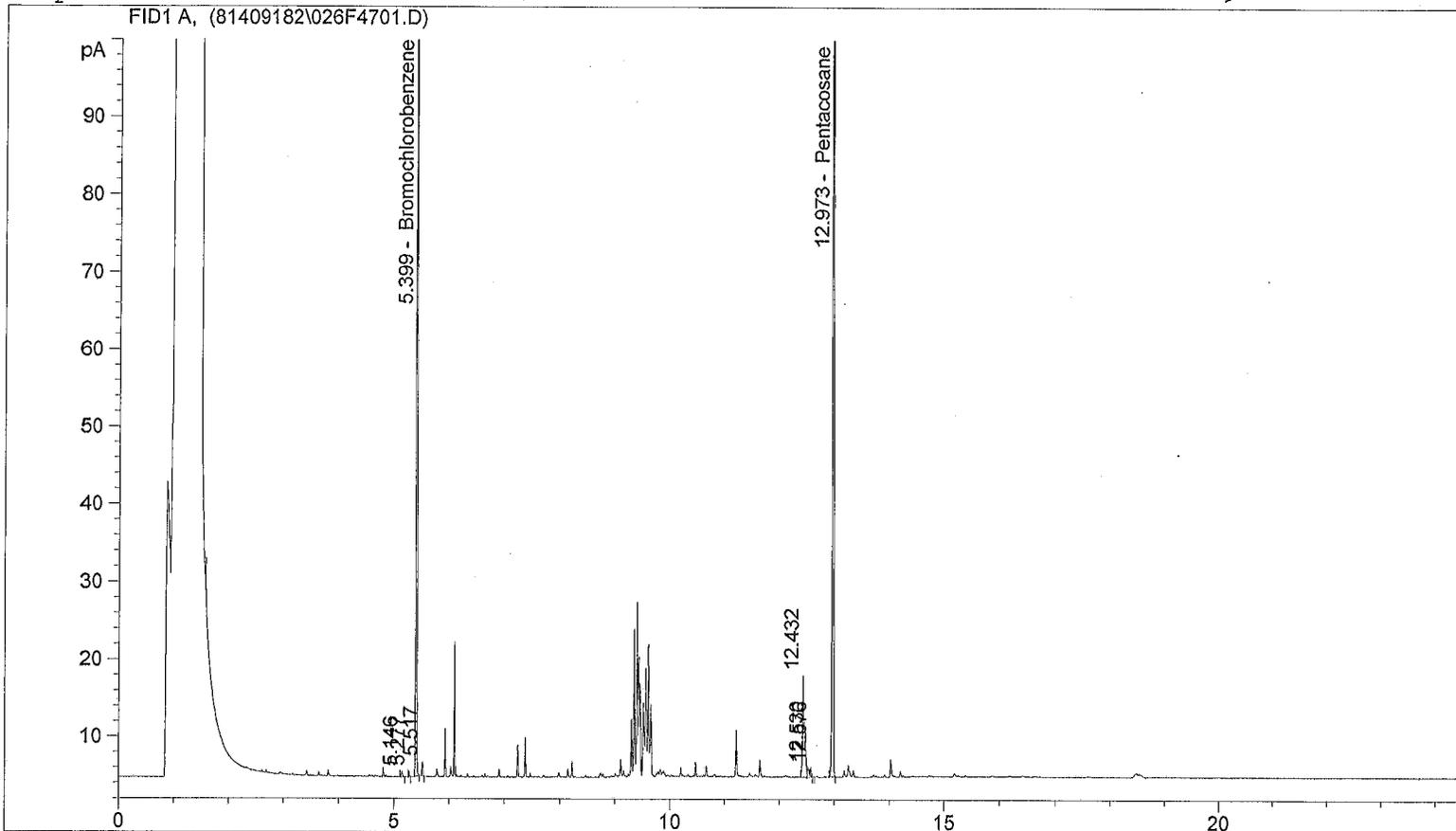
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.733	FID2 B,	Bromochlorobenzene X	3149.079	245.187
12.269		Pentacosane (conc)	3247.219	100.978

101%

0 < 310 ug/L

09.23.14 ES

Sample Name: EV14090107-04 10ML



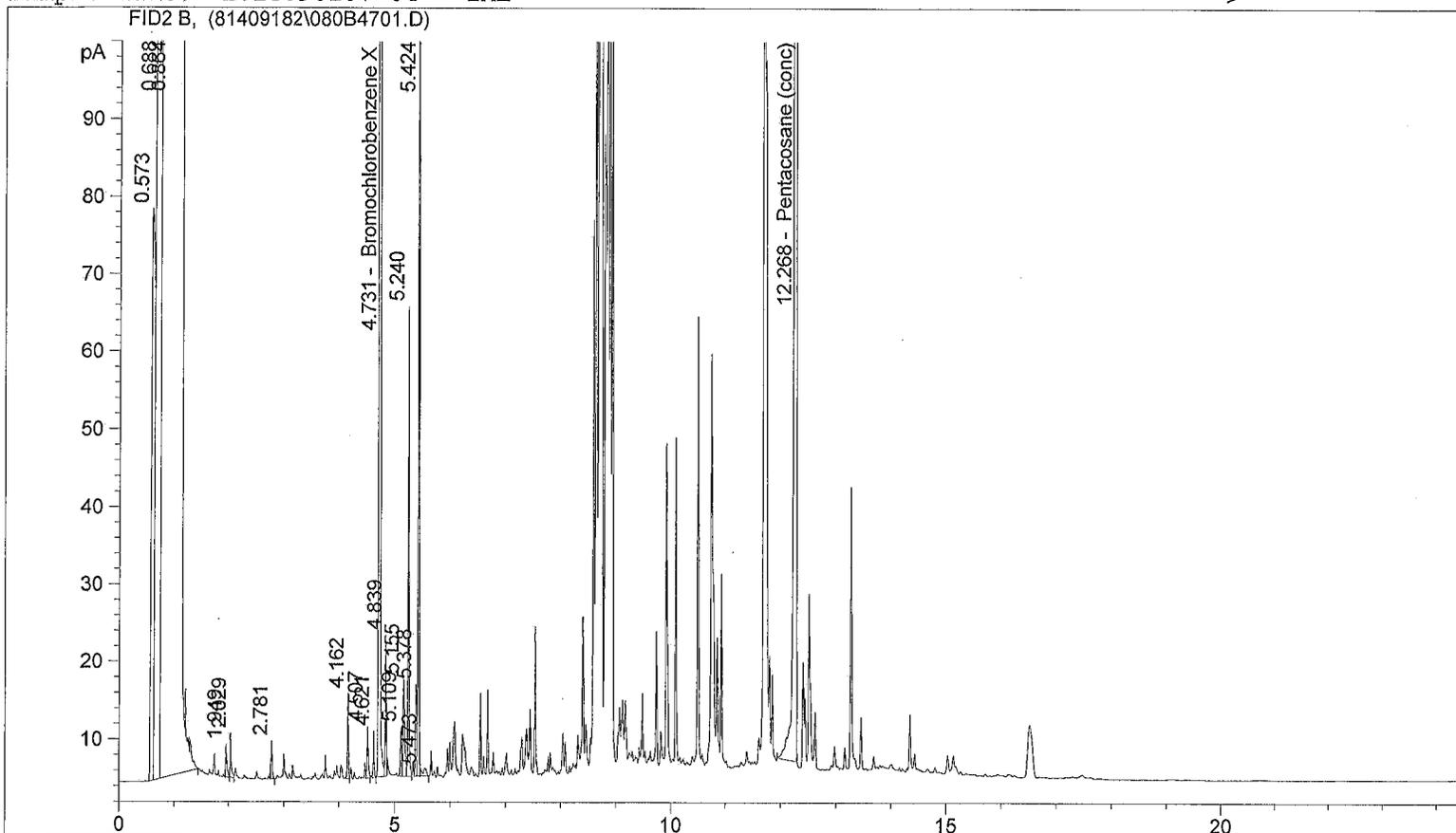
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	261.816	19.808
12.973		Pentacosane	288.617	8.864

797.
891.

G < 130 ug/L
 D < 310 ug/L

09.23.14

Sample Name: EV14090107-04 1ML



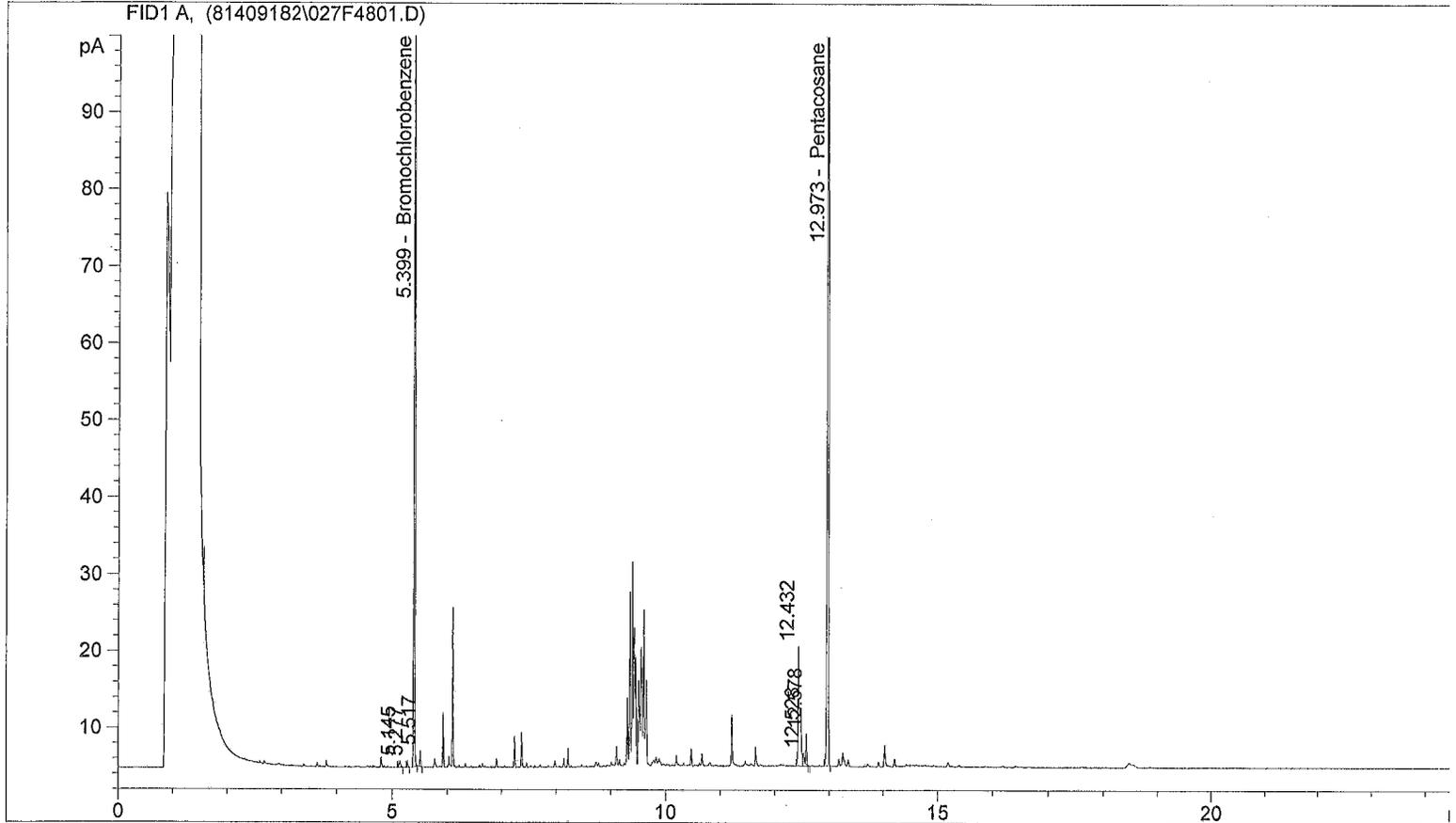
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.731	FID2 B,	Bromochlorobenzene X	2755.678	214.557
12.268		Pentacosane (conc)	3070.397	95.479

95%

0 < 310 ug/L

09.23.14

Sample Name: EV14090107-05 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	271.342	20.529
12.973		Pentacosane	306.976	9.428

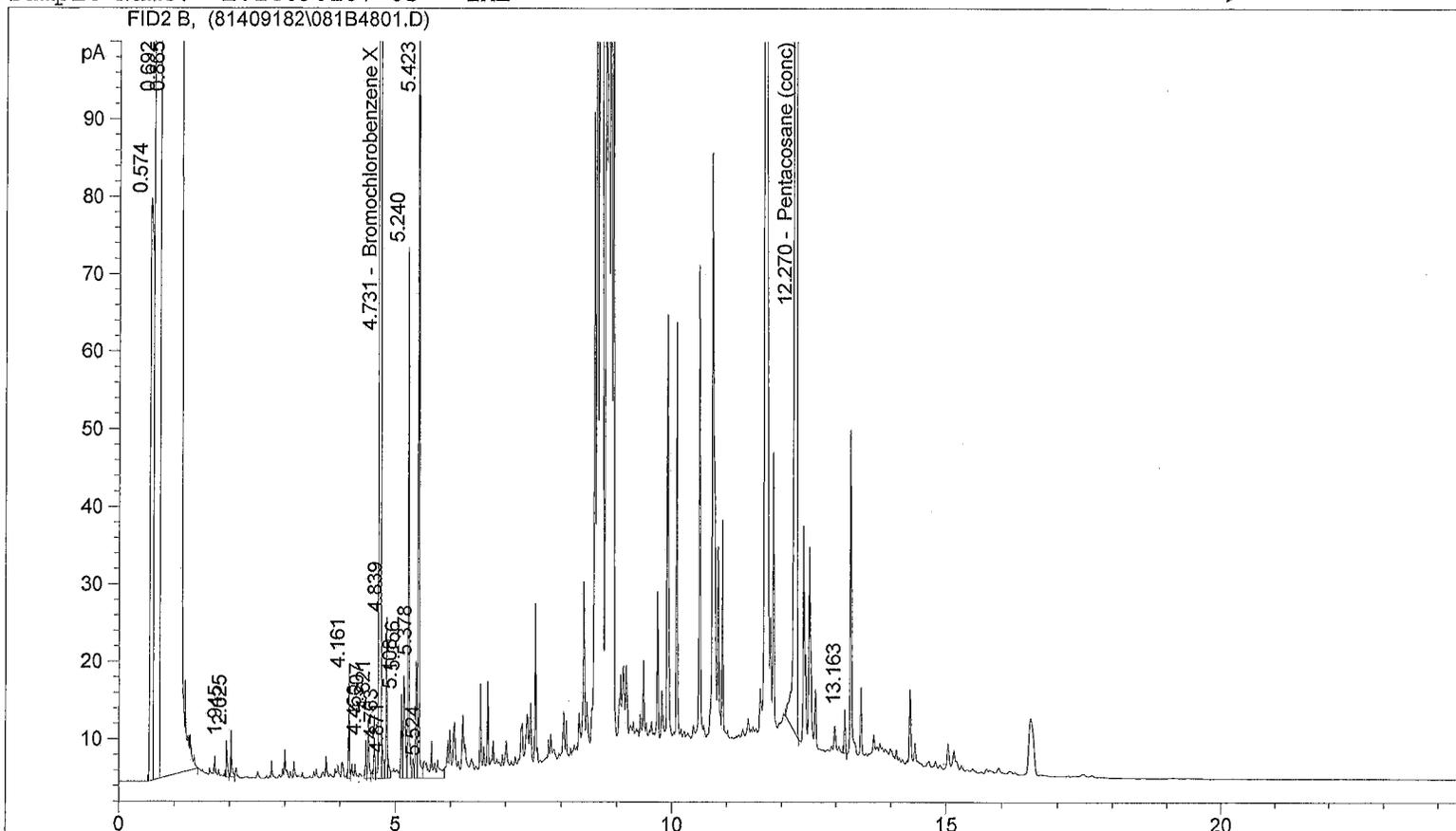
82%
94%

G < 130 ug/L
 D < 310 ug/L

09.23.14ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\081B4801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 9/20/2014 10:18:18 PM 9/20/2014 10:18:18 PM
 Report Creation: 9/23/2014 11:42:43 AM

Sample Name: EV14090107-05 1ML



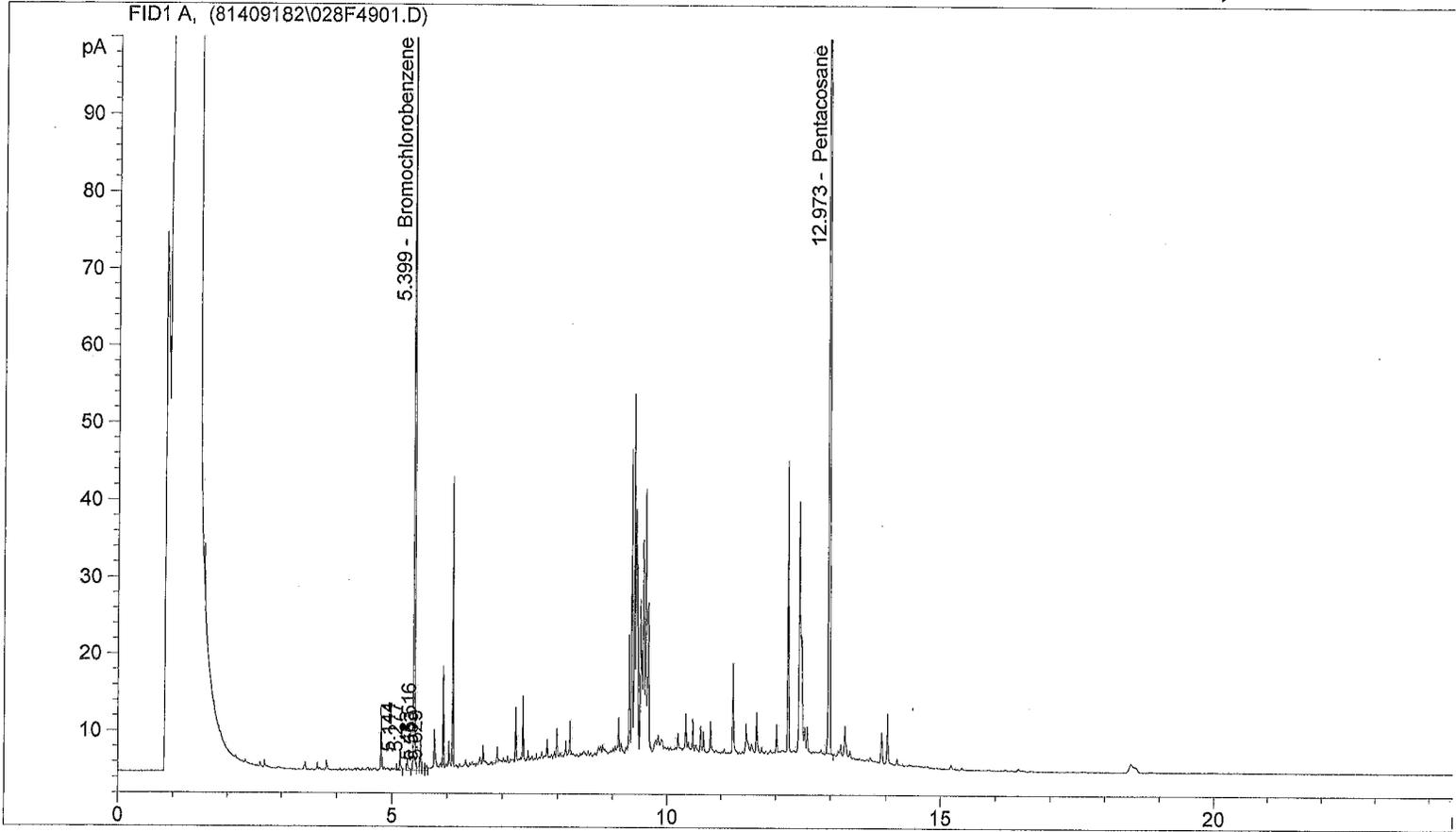
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.731	FID2 B,	Bromochlorobenzene X	2816.465	219.290
12.270		Pentacosane (conc)	3180.093	98.890

99%

0 < 310 ug/L

09.23.14 EBS

Sample Name: EV14090107-06 10ML

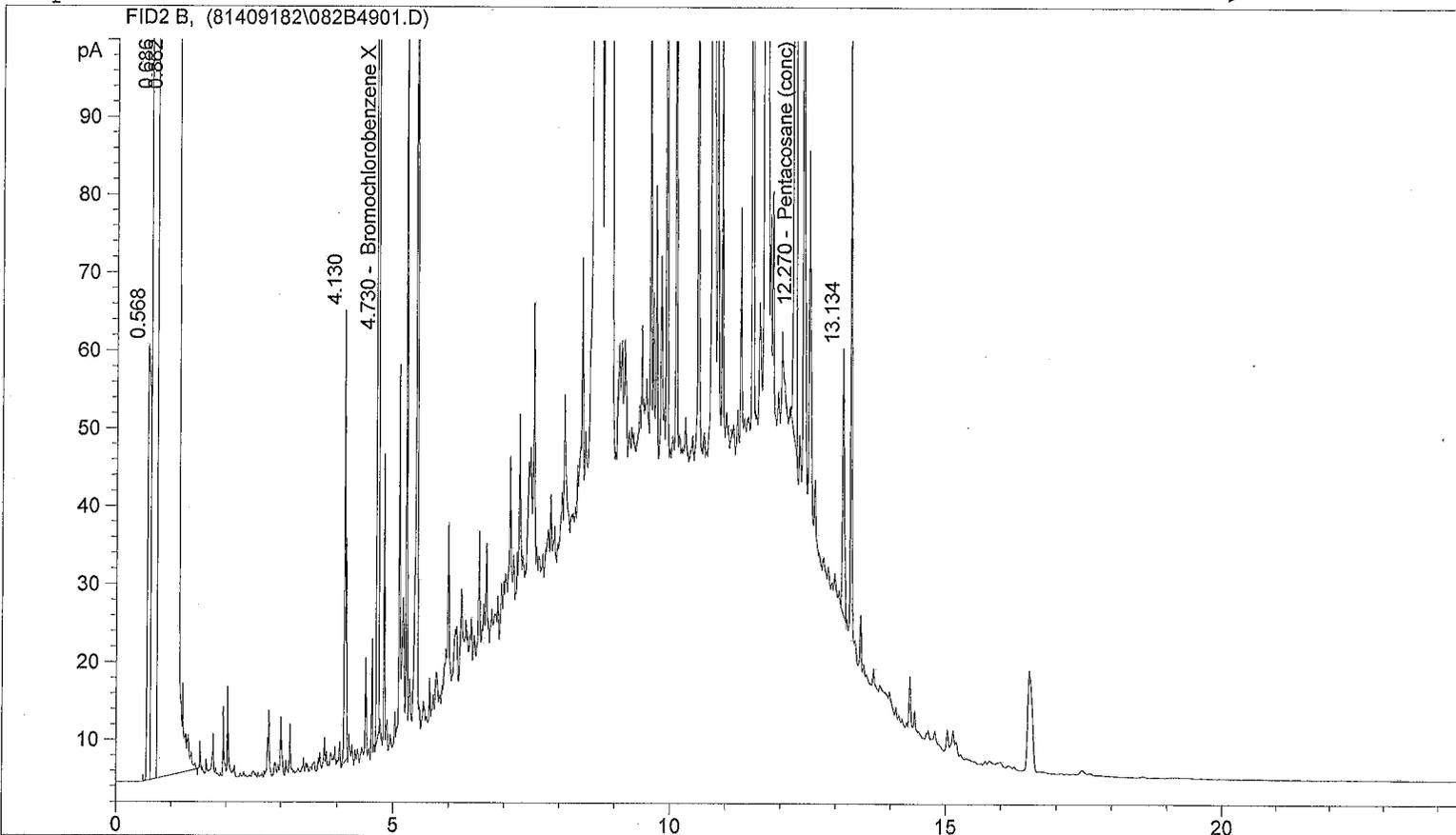


Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	250.301	18.937
12.973		Pentacosane	296.134	9.095

G < 130 ug/L
D > 310 ug/L Unidentified Diesel Range Product

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\082B4901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 9/20/2014 10:53:35 PM 9/20/2014 10:53:35 PM
 Report Creation: 9/23/2014 11:43:44 AM

Sample Name: EV14090107-06 1ML



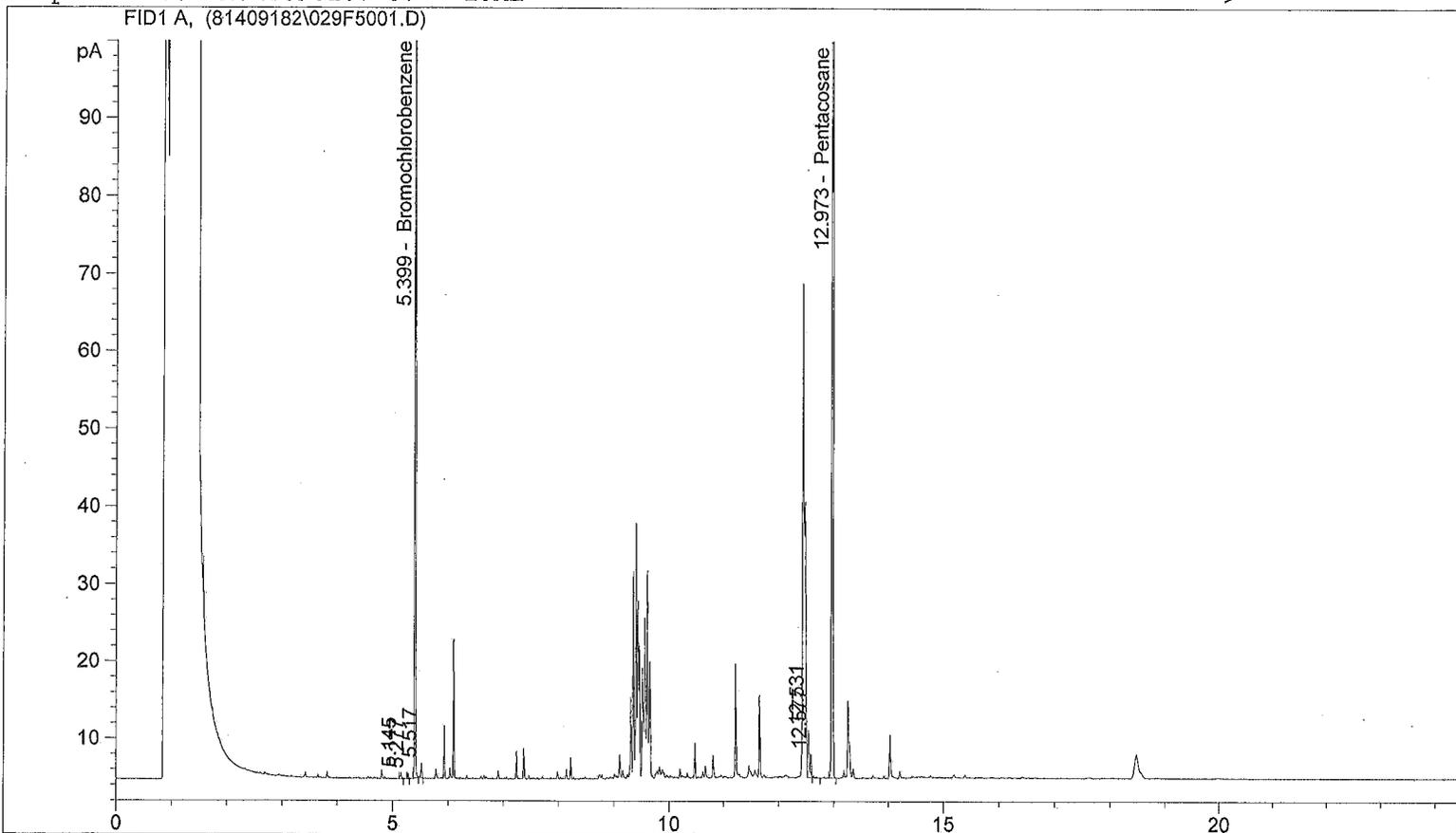
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.730	FID2 B,	Bromochlorobenzene X	2613.097	203.456
12.270		Pentacosane (conc)	2989.356	92.959

93%

0 > 310 mg/L Light Oil or similar product

09.23.14 EBS

Sample Name: EV14090107-07 10ML



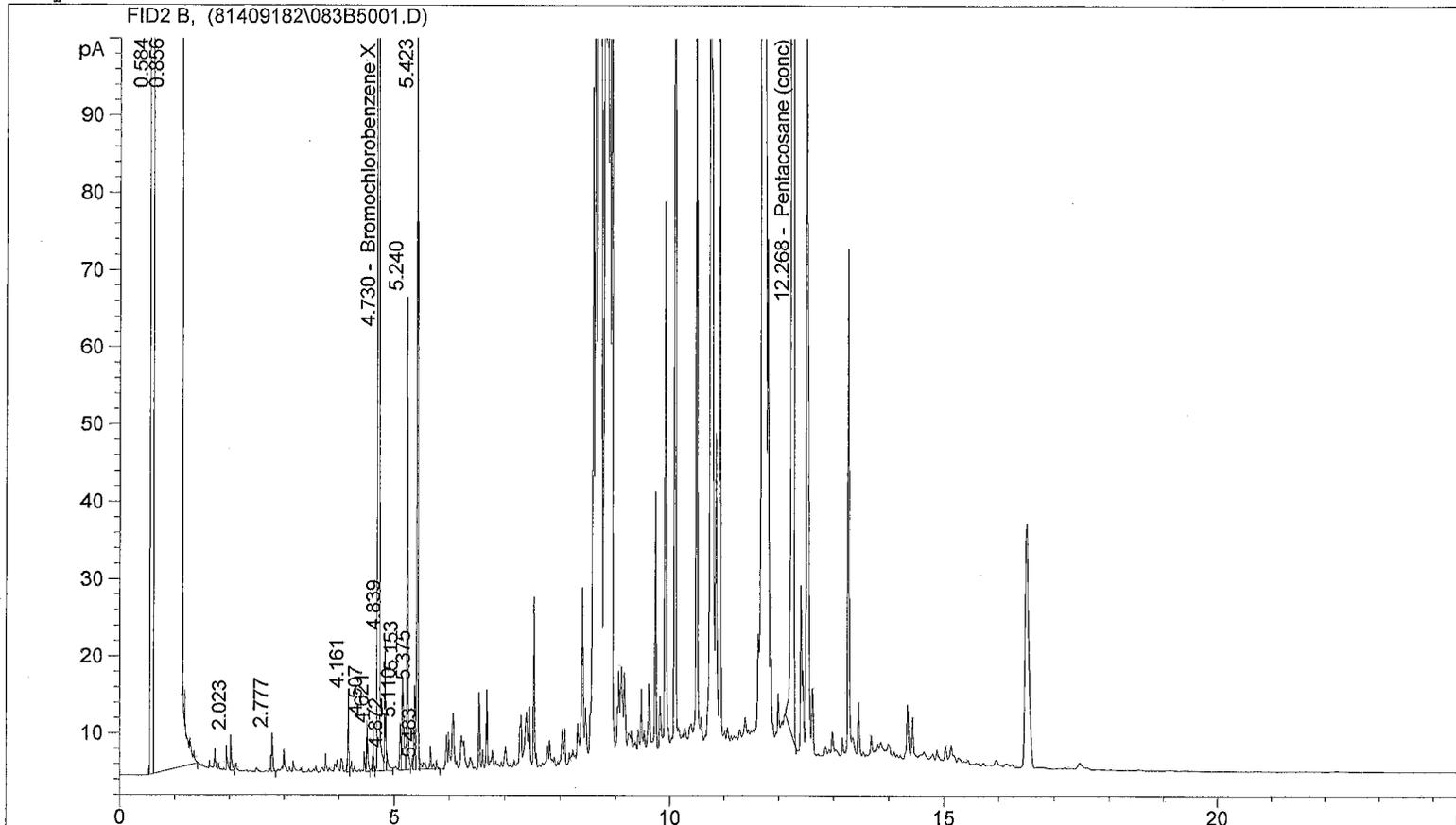
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	270.193	20.442
12.973		Pentacosane	310.165	9.526

82%
95%

G < 130 ug/L
 D < 310 ug/L

09.23.14

Sample Name: EV14090107-07 1ML



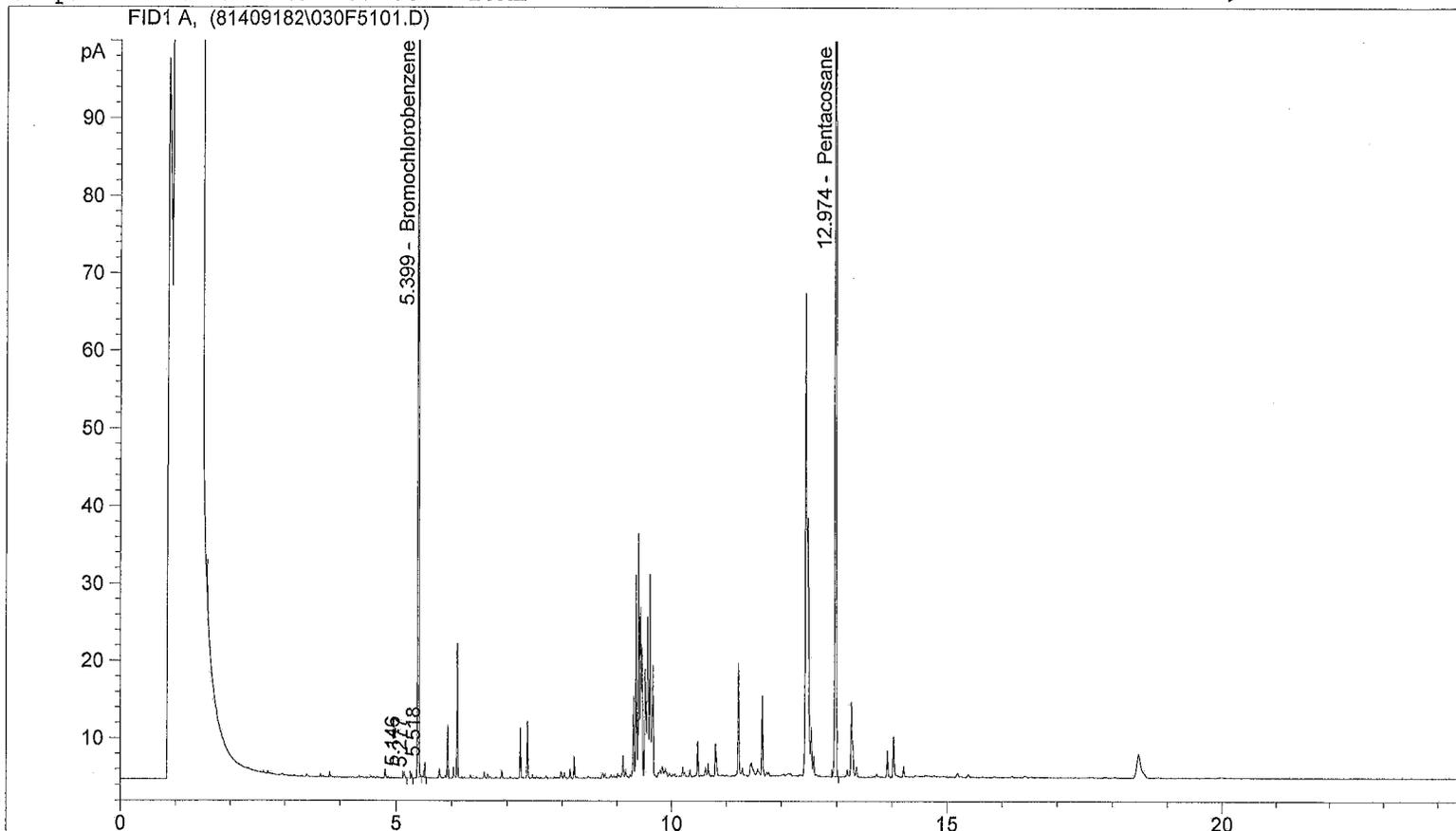
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.730	FID2 B,	Bromochlorobenzene X	2583.407	201.144
12.268		Pentacosane (conc)	2943.831	91.543

927.

0 < 310 μ/L

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\030F5101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCLDW.M
 Injection Date & Time: 9/21/2014 12:04:06 AM 9/21/2014 12:04:06 AM
 Report Creation: 9/23/2014 1:41:42 PM

Sample Name: EV14090107-08 10ML



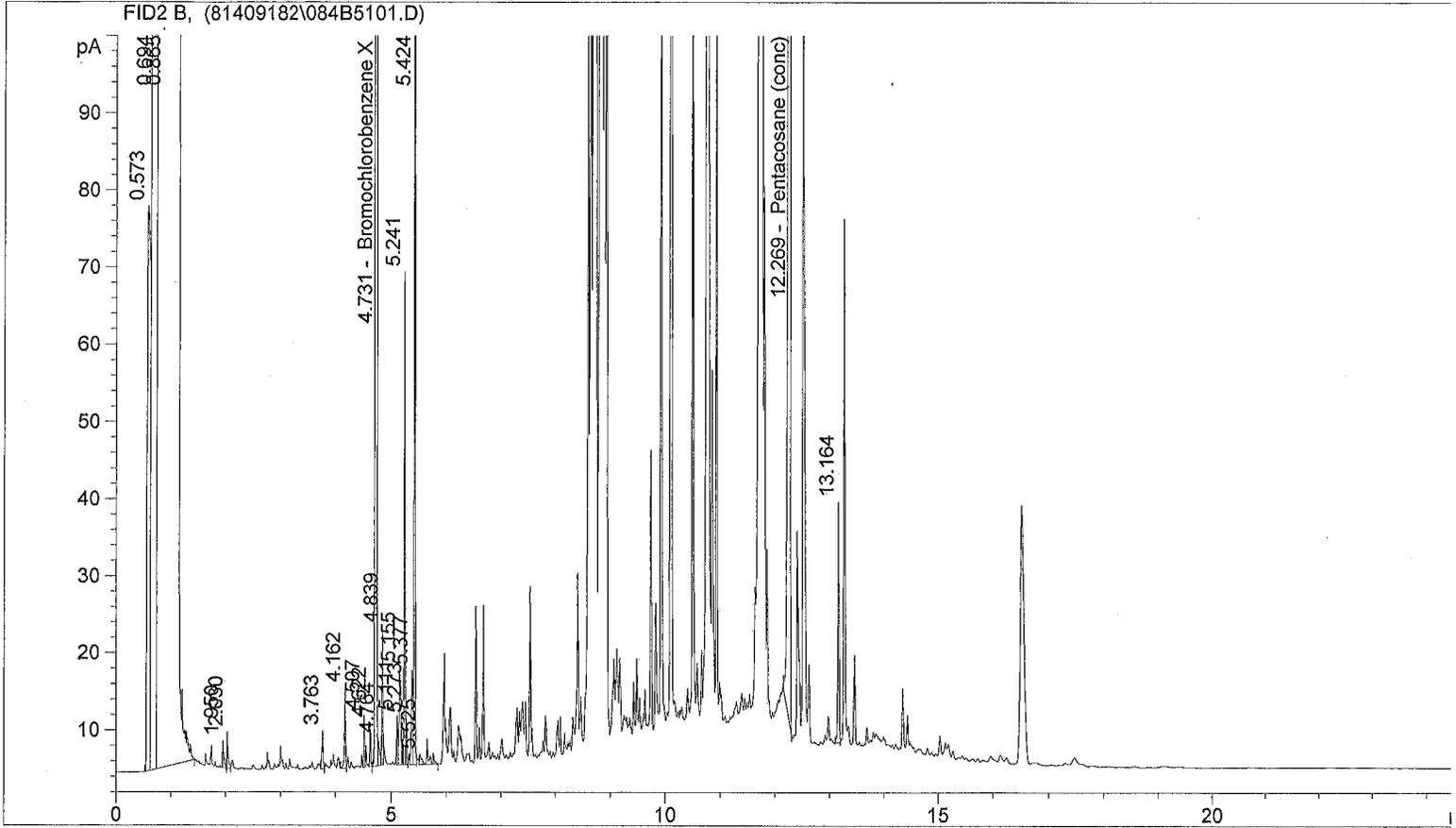
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	260.621	19.718
12.974		Pentacosane	301.182	9.250

79%
93%

G < 130 ug/L
 D < 310 ug/L

09.23.14

Sample Name: EV14090107-08 1ML



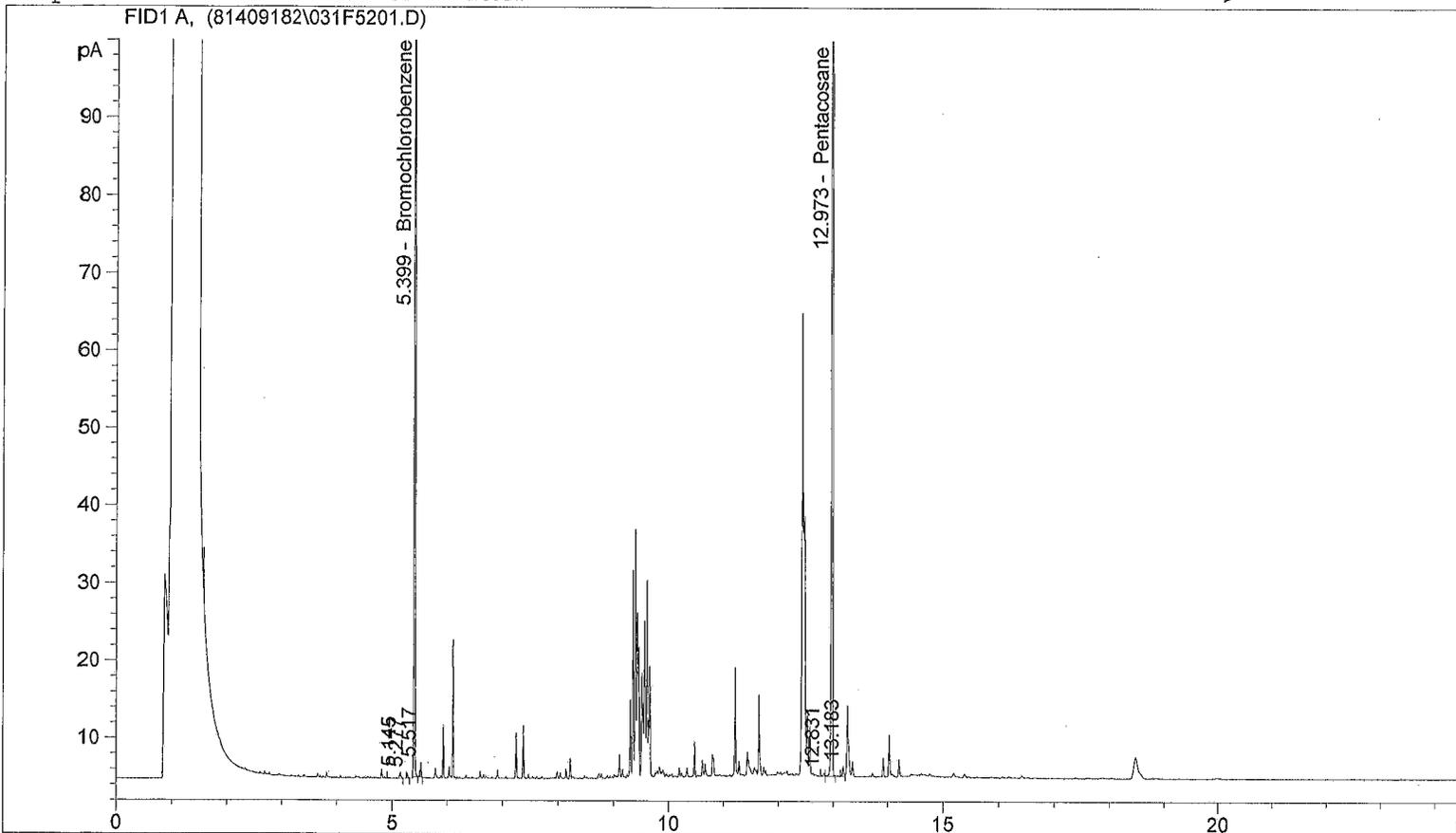
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.731	FID2 B,	Bromochlorobenzene X	2747.059	213.886
12.269		Pentacosane (conc)	3096.118	96.279

96%

0.2310 g/L

09.23.14 EBS

Sample Name: EV14090107-09 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	297.950	22.542
12.973		Pentacosane	318.237	9.774

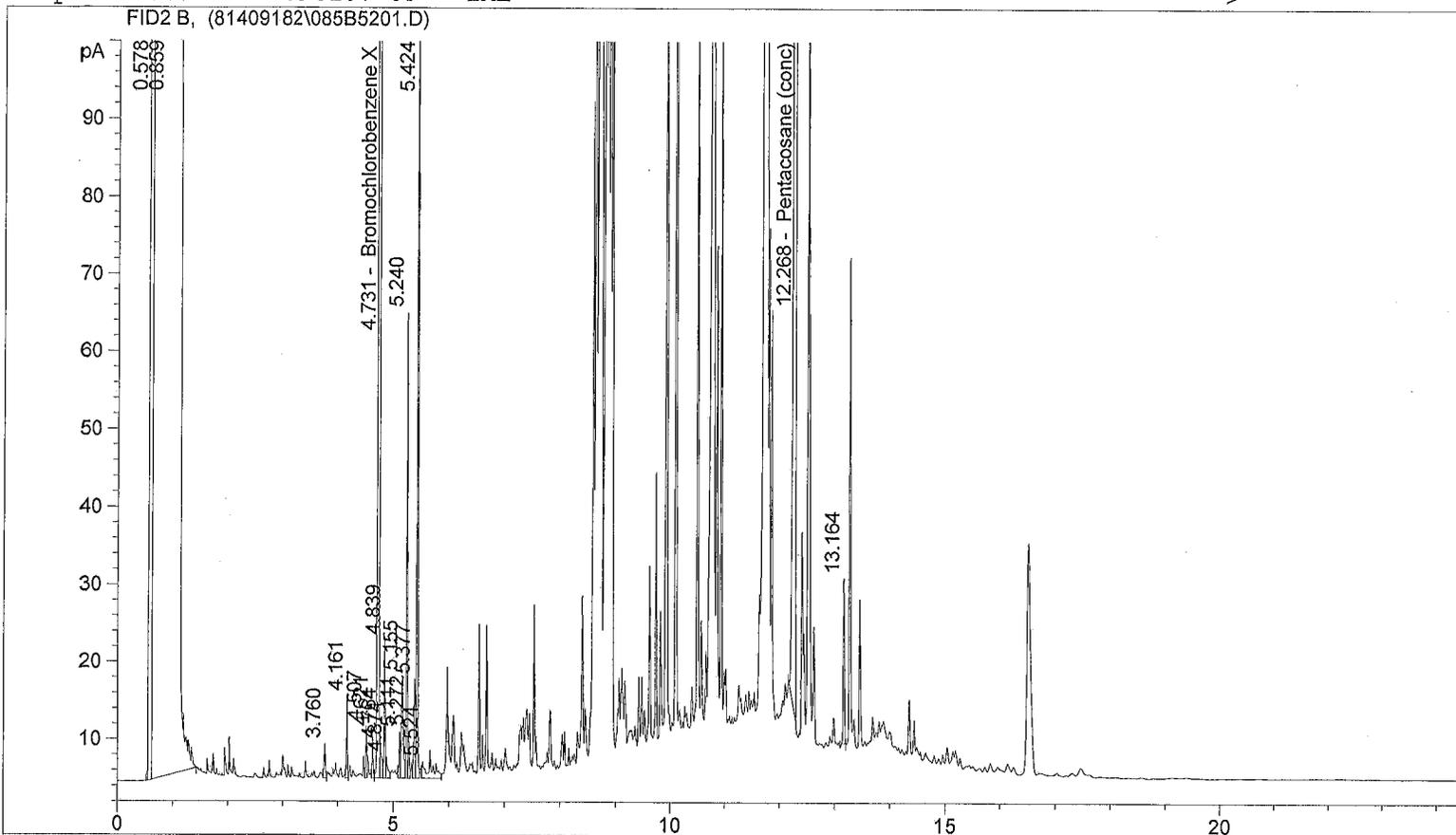
90%
98%

G < 130 ug/L
 D < 310 ug/L

09-23-14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\085B5201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 9/21/2014 12:39:23 AM 9/21/2014 12:39:23 AM
 Report Creation: 9/23/2014 11:46:37 AM

Sample Name: EV14090107-09 1ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.731	FID2 B,	Bromochlorobenzene X	2886.430	224.737
12.268		Pentacosane (conc)	3003.972	93.413

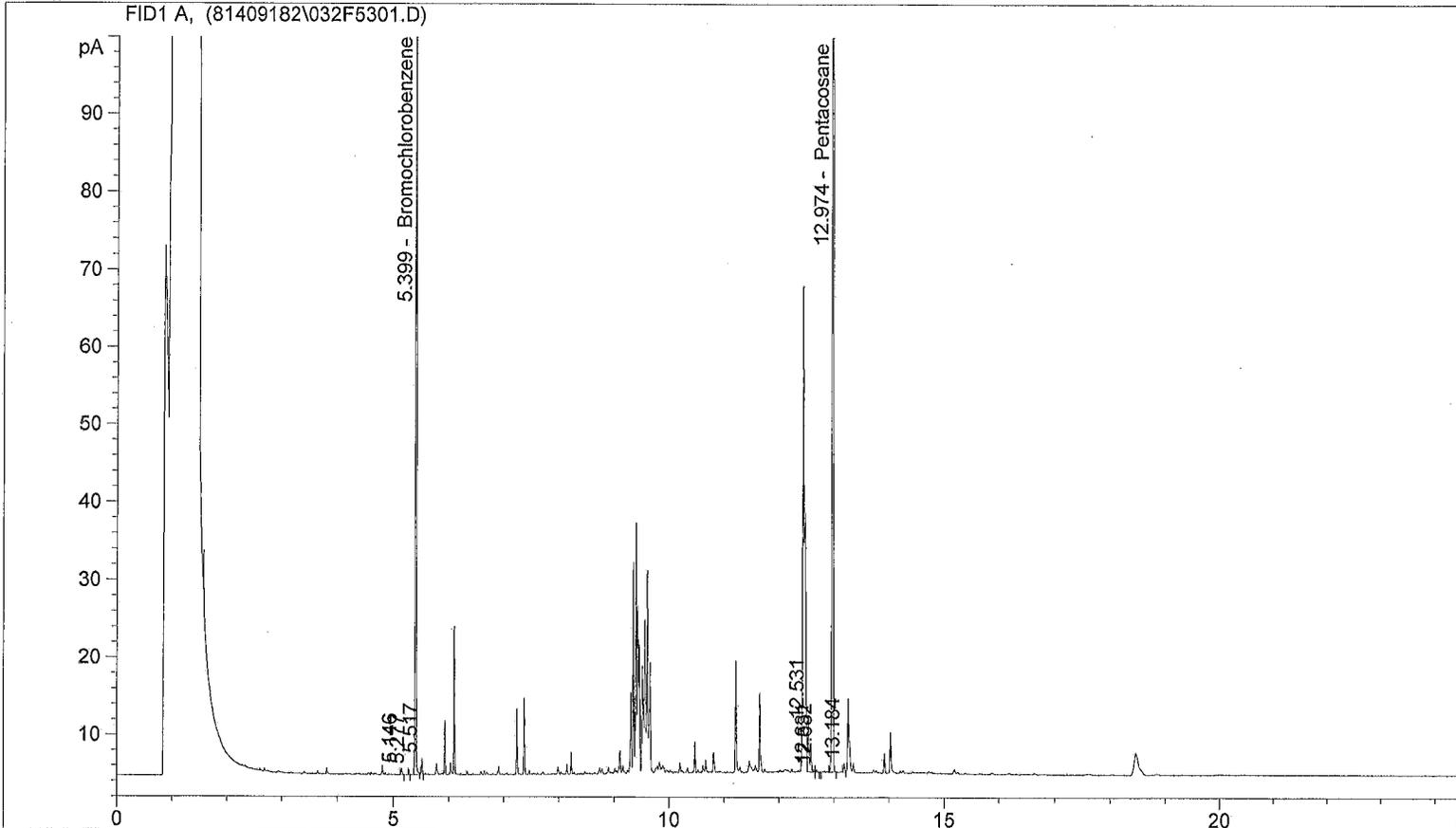
93%

0 < 310 ug/L

09.23.14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\032F5301.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 9/21/2014 1:14:36 AM 9/21/2014 1:14:36 AM
 Report Creation: 9/23/2014 1:55:58 PM

Sample Name: EV14090107-10 10ML



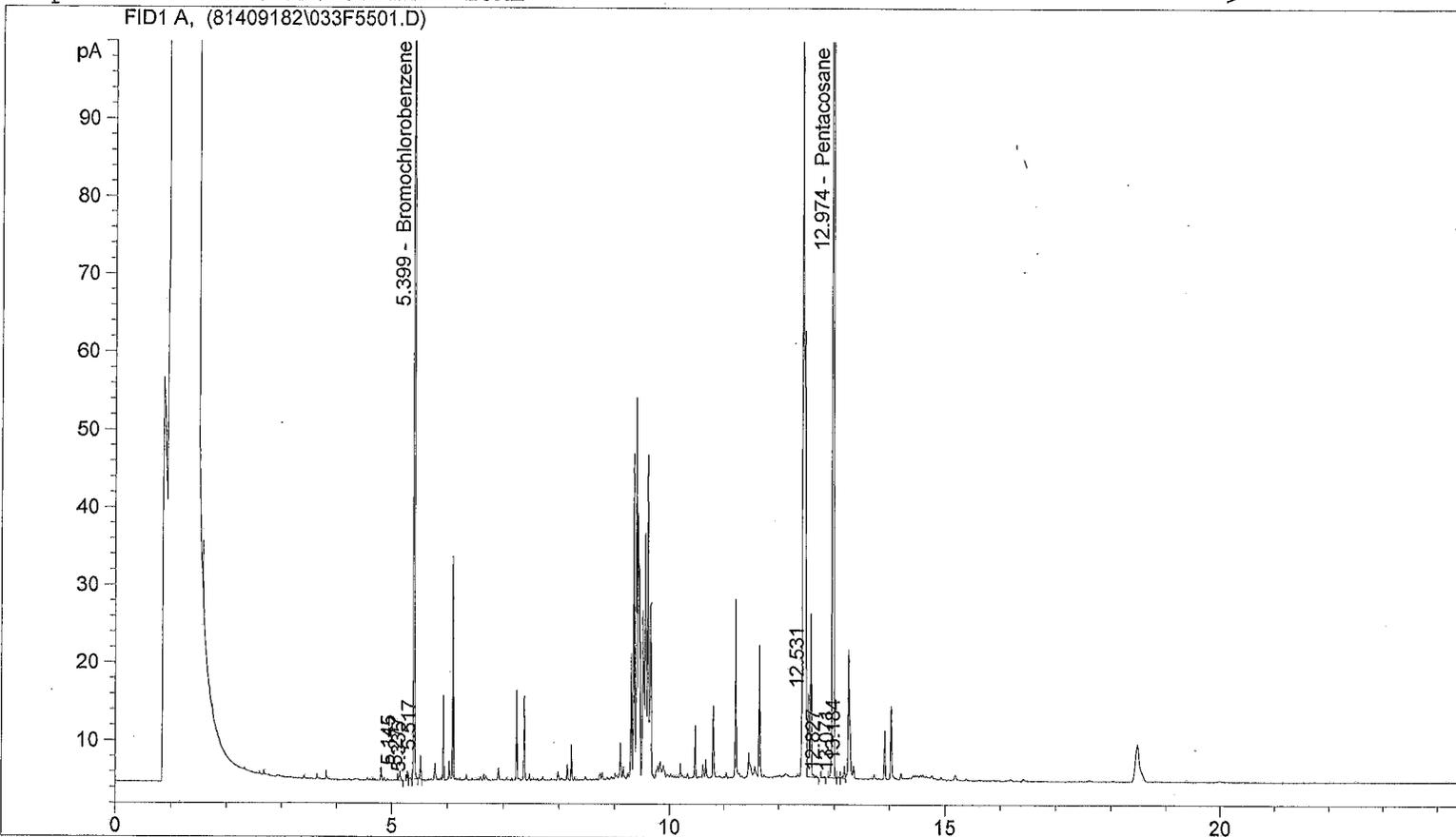
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	294.882	22.310
12.974		Pentacosane	317.806	9.760

89%
98%

G < 130 µg/L
 D < 310 µg/L

09.23.14E

Sample Name: EV14090107-11 10ML



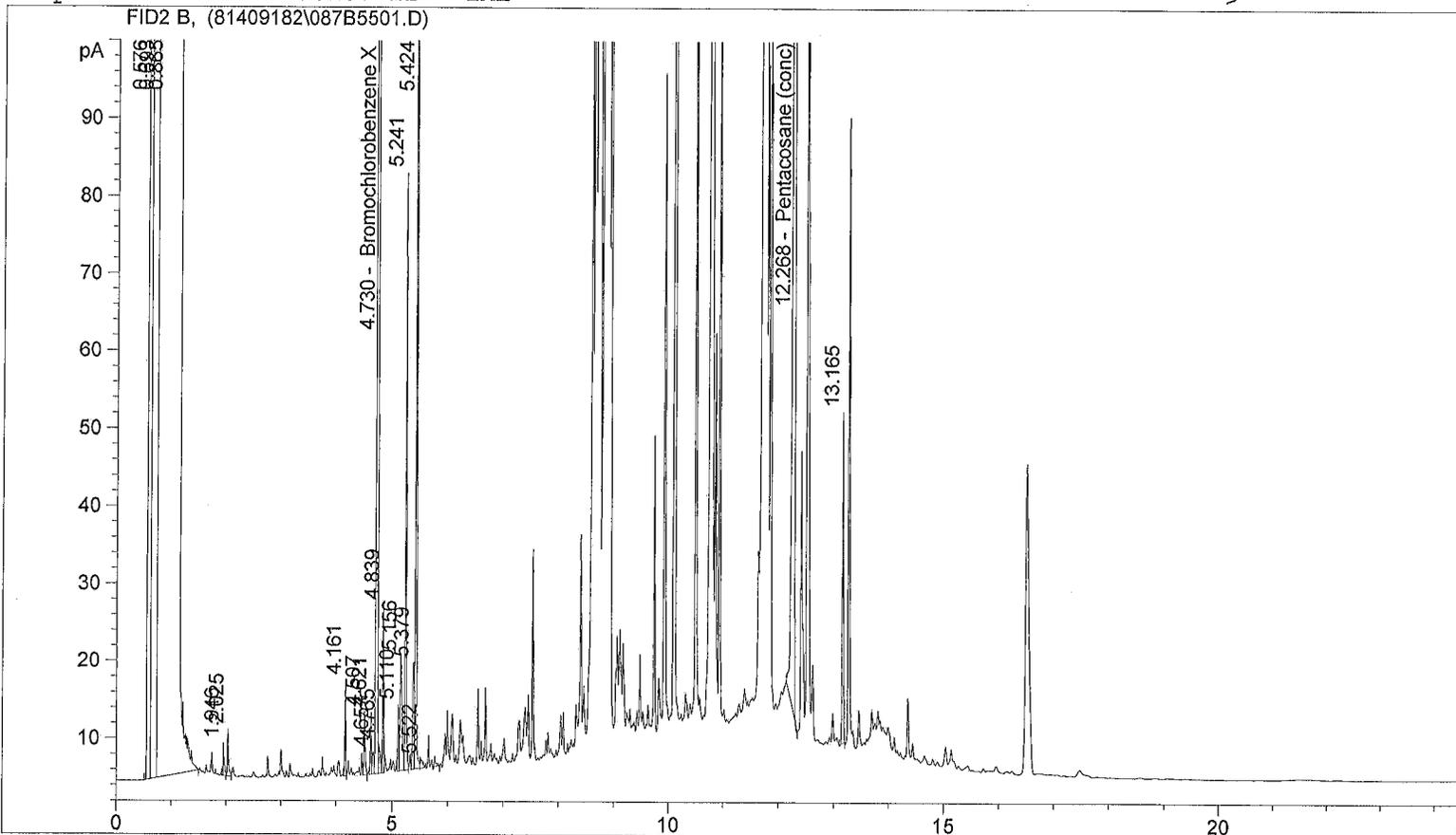
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	320.419	24.242
12.974		Pentacosane	387.703	11.907

97%
119%

G < 130 ug/L
 D < 310 ug/L

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\087B5501.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 9/21/2014 2:25:11 AM 9/21/2014 2:25:11 AM
 Report Creation: 9/23/2014 11:47:20 AM

Sample Name: EV14090107-11 1ML



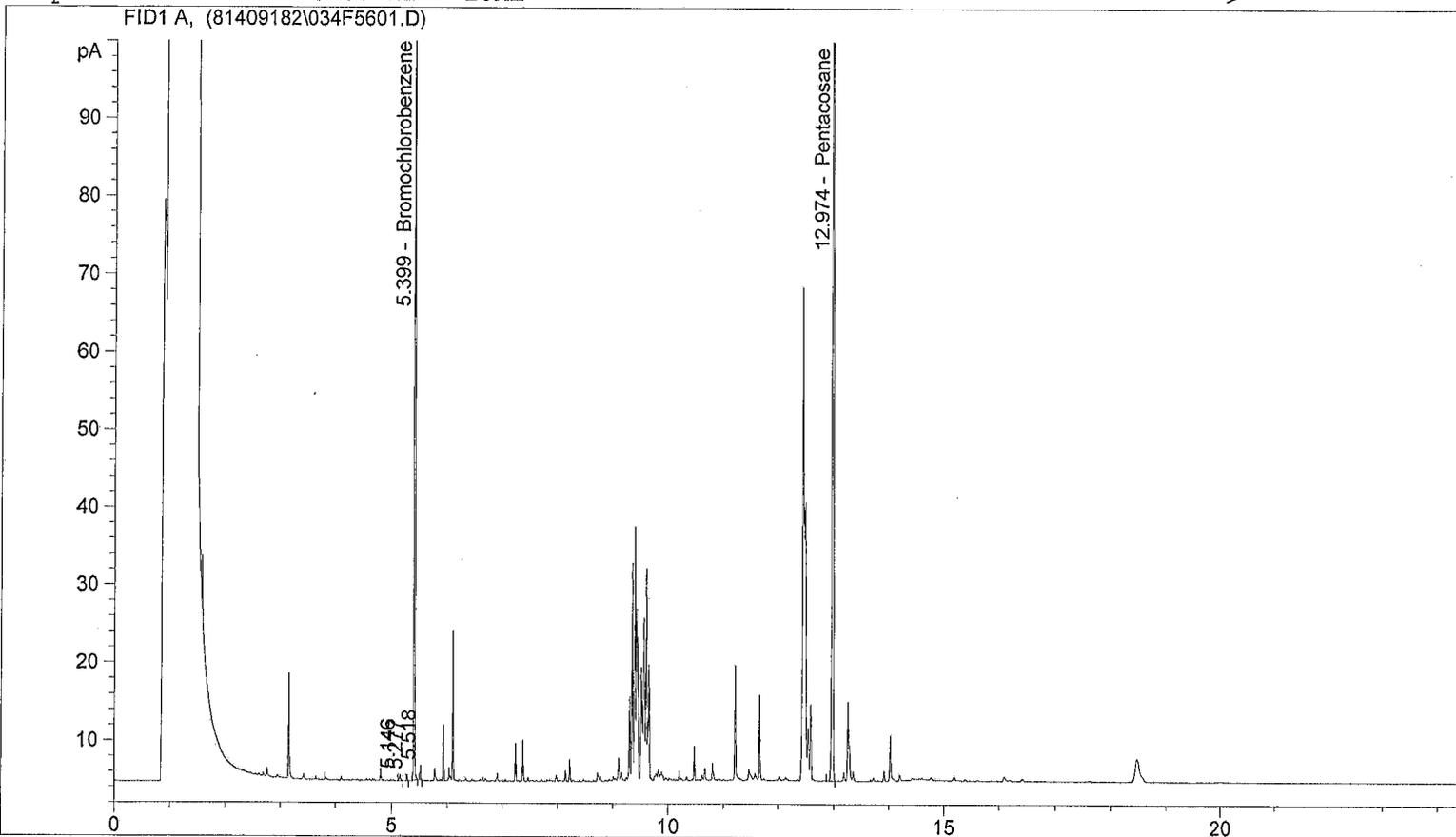
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.730	FID2 B,	Bromochlorobenzene X	2511.950	195.580
12.268		Pentacosane (conc)	2976.240	92.551

93%

0 < 310 ug/L

09.23.14 E

Sample Name: EV14090107-12 10ML



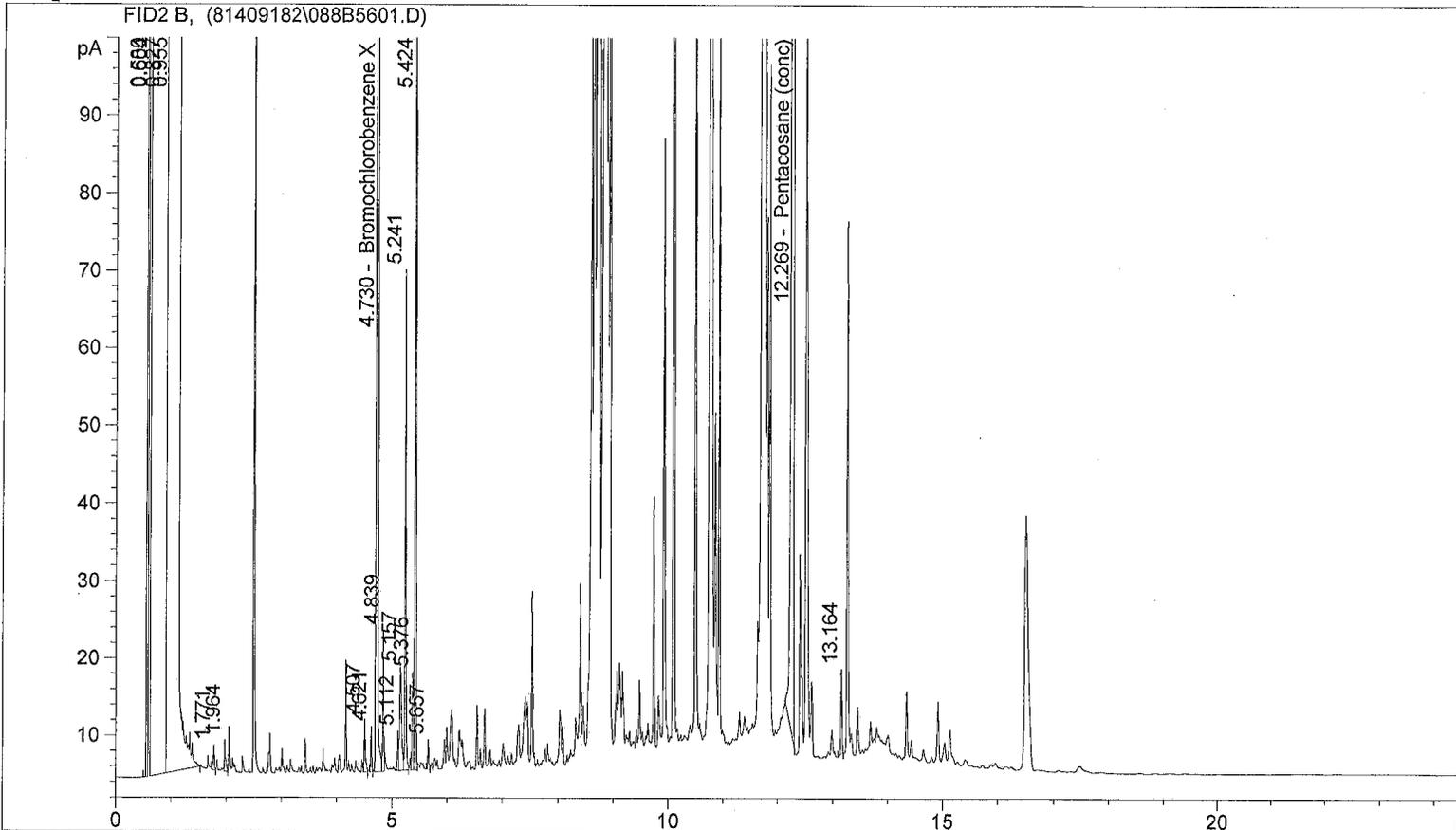
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	252.983	19.140
12.974		Pentacosane	320.483	9.842

77%
98%

G < 130 µ/L
 D < 310 µ/L

09.23.14

Sample Name: EV14090107-12 1ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.730	FID2 B,	Bromochlorobenzene X	2570.348	200.127
12.269		Pentacosane (conc)	3146.707	97.852

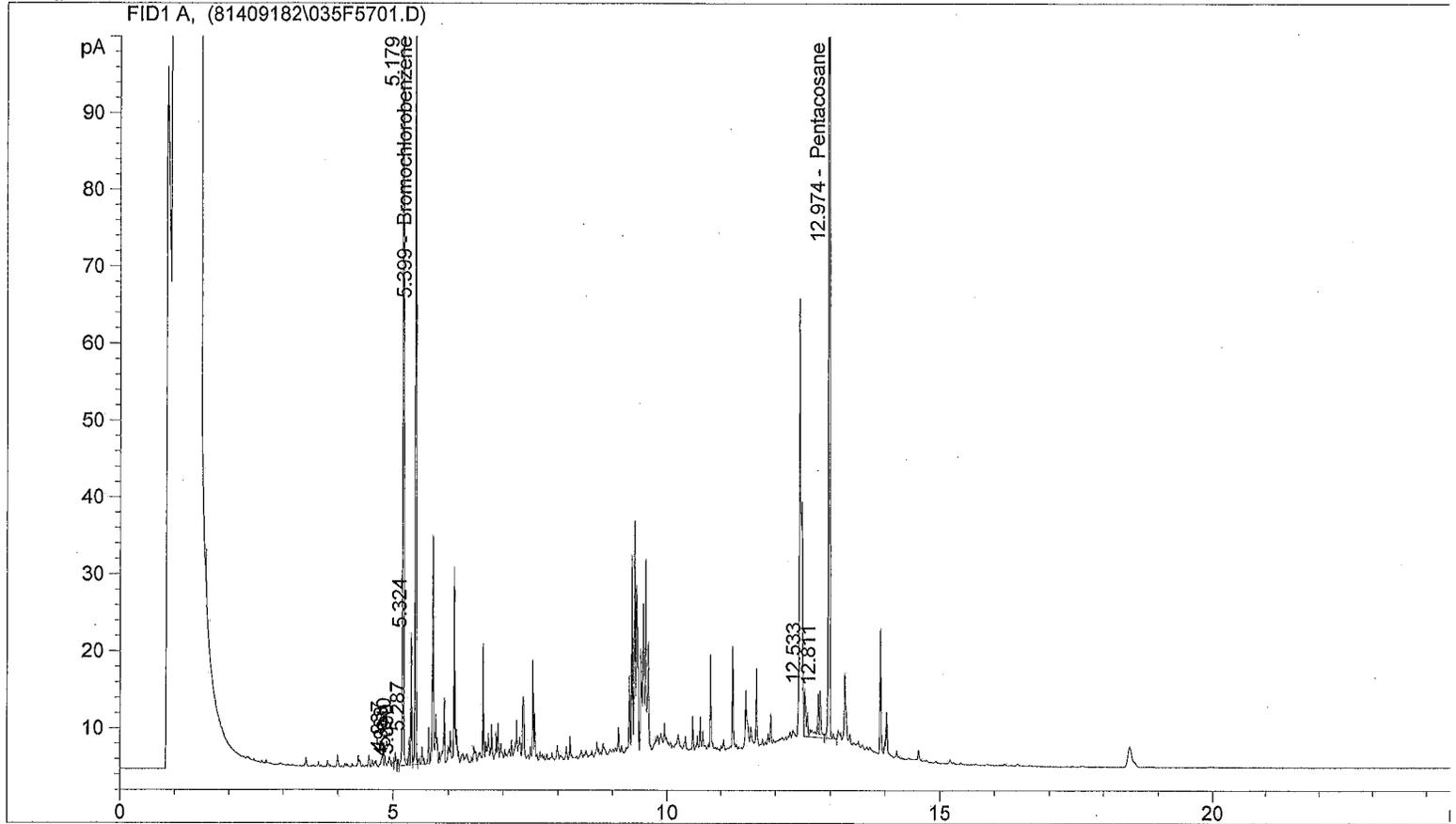
98%

0 < 310 ug/L

09.23.14 EBS

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\035F5701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 9/21/2014 3:35:39 AM 9/21/2014 3:35:39 AM
 Report Creation: 9/23/2014 12:09:48 PM

Sample Name: EV14090107-13 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	211.854	16.028
12.974		Pentacosane	295.763	9.083

65%
91%

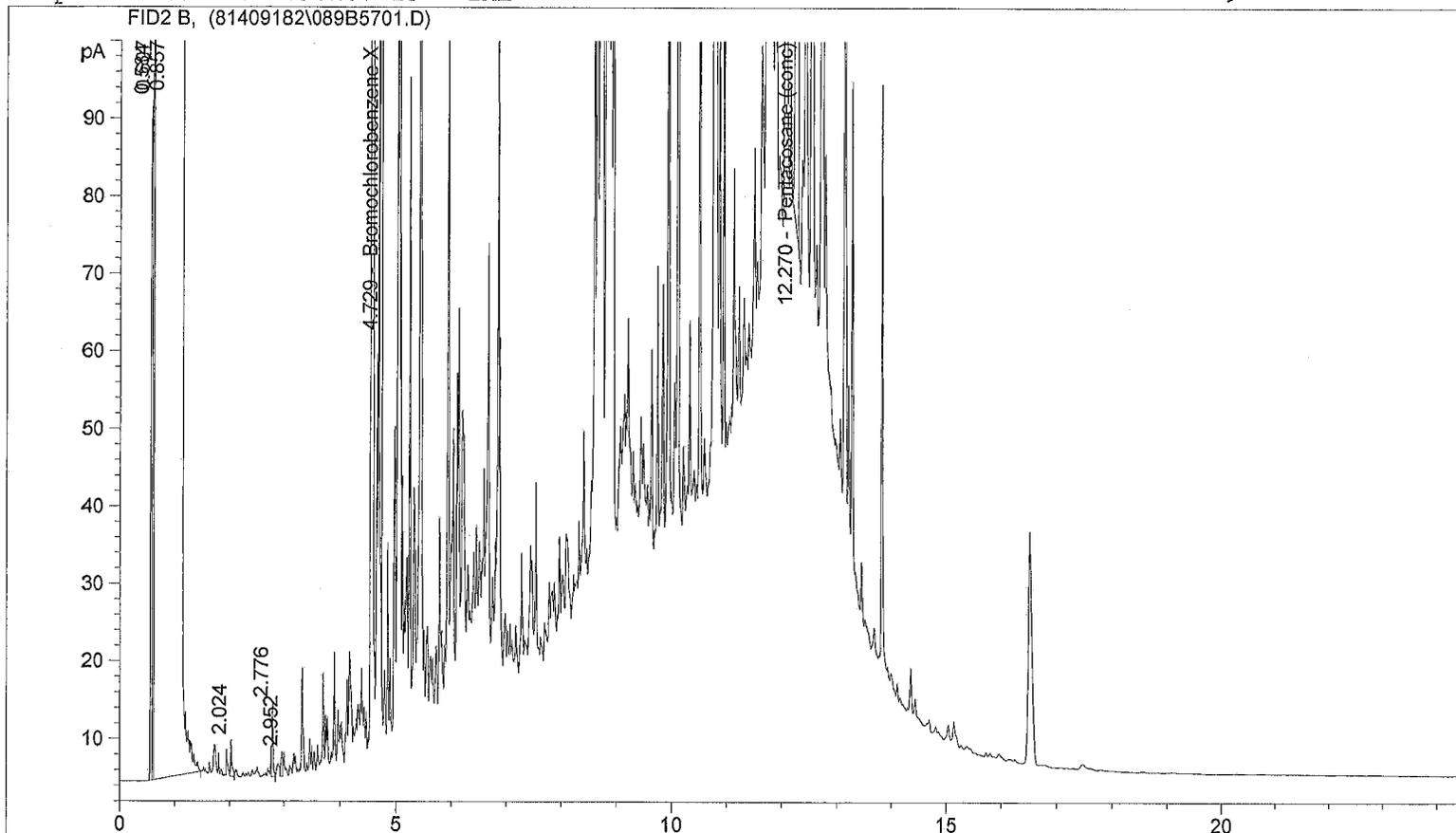
G < 130 ug/L

D > 310 ug/L Unidentified Diesel Range Product

09.23.14ea

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\089B5701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 9/21/2014 3:35:39 AM 9/21/2014 3:35:39 AM
 Report Creation: 9/23/2014 11:48:23 AM

Sample Name: EV14090107-13 1ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.729	FID2 B,	Bromochlorobenzene X	2122.530	165.260
12.270		Pentacosane (conc)	2899.334	90.160

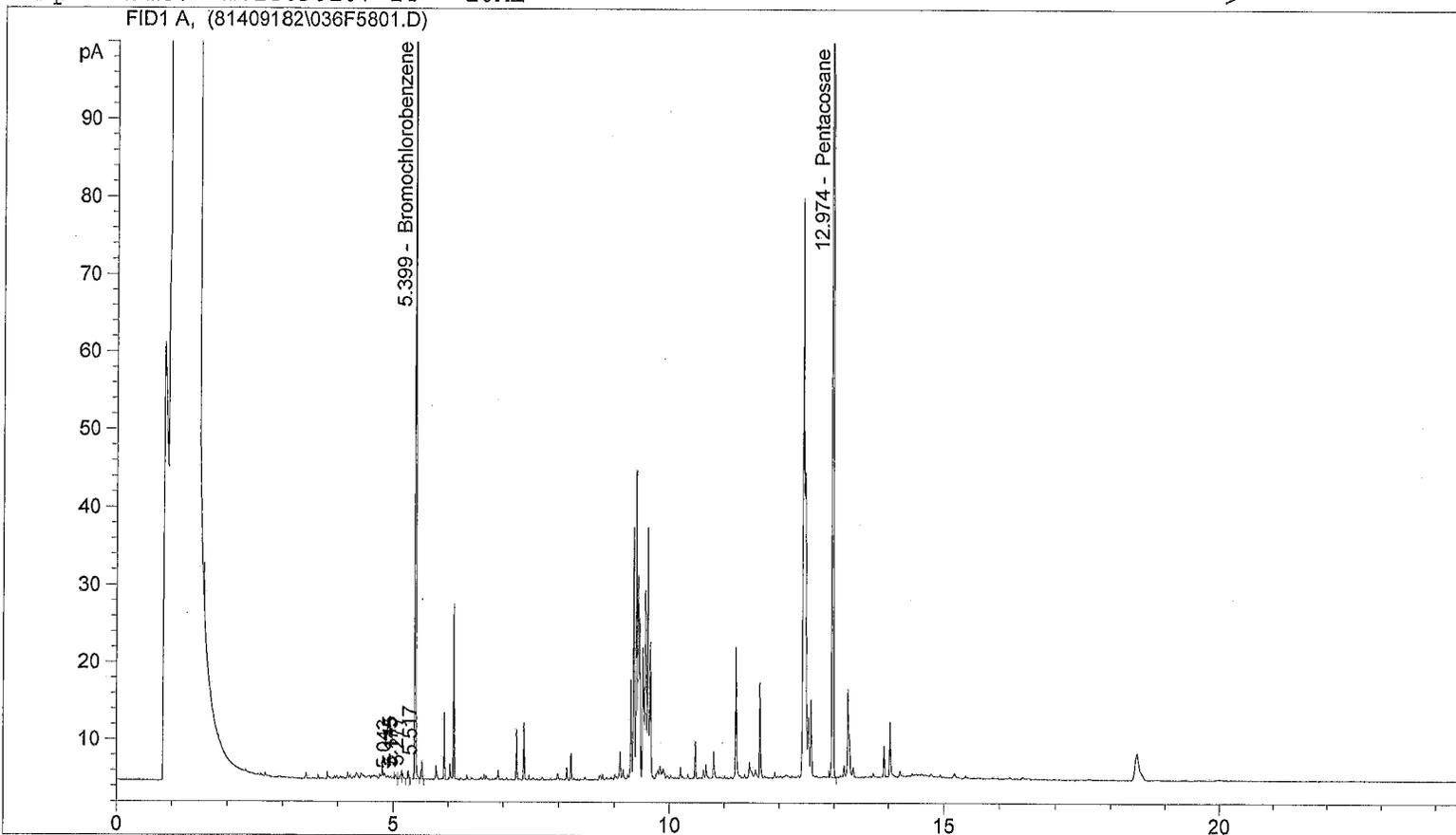
90%

O > 310 µg/L unidentified Oil Range Product

09.23.14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\036F5801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 9/21/2014 4:10:56 AM 9/21/2014 4:10:56 AM
 Report Creation: 9/23/2014 11:22:45 AM

Sample Name: EV14090107-14 10ML



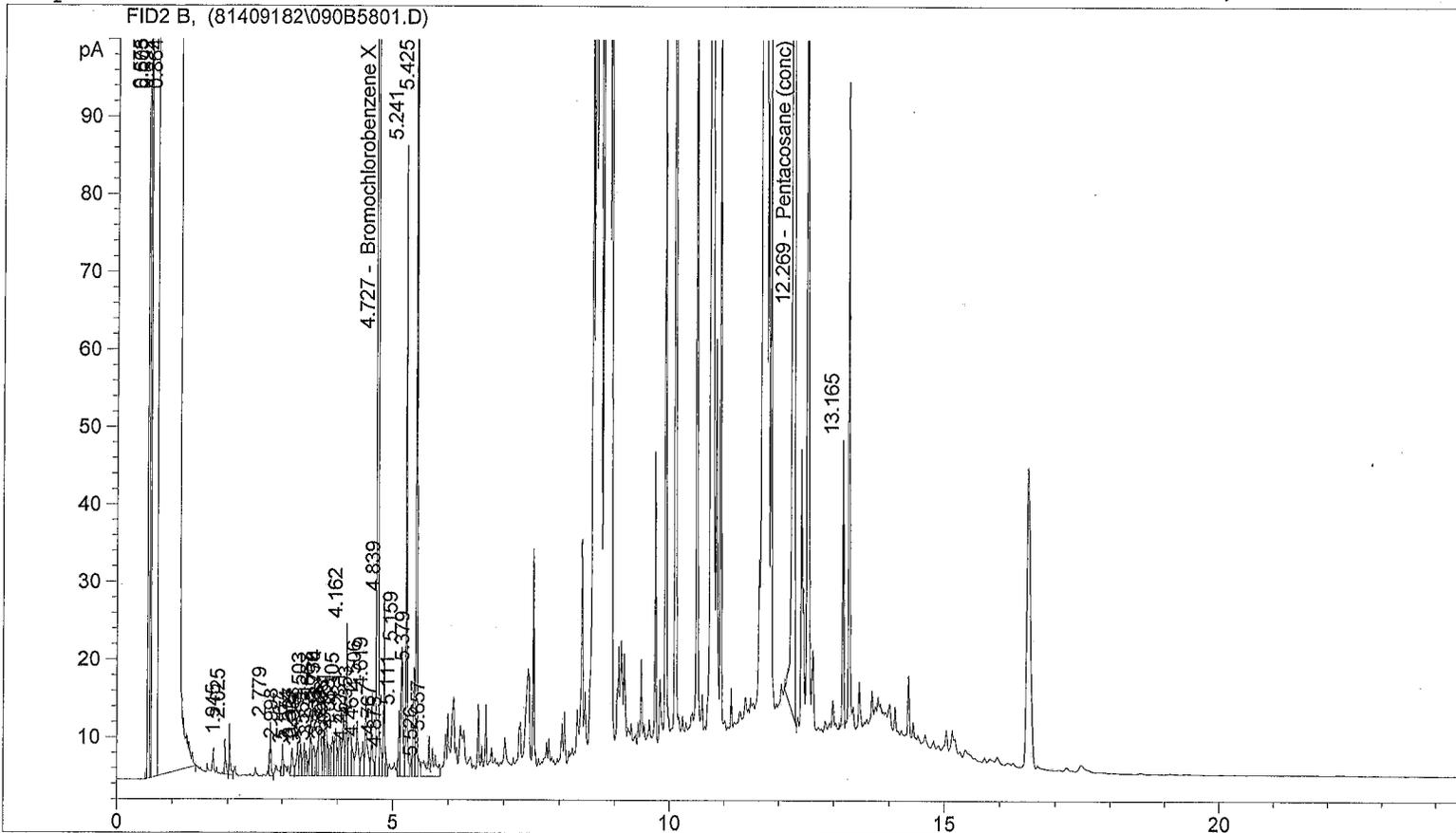
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	203.149	15.370
12.974		Pentacosane	300.728	9.236

61%
92%

G < 130 ug/L
 D < 310 ug/L

09.23.14 EBS

Sample Name: EV14090107-14 1ML ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.727	FID2 B,	Bromochlorobenzene X	2110.278	164.306
12.269		Pentacosane (conc)	3046.446	94.734

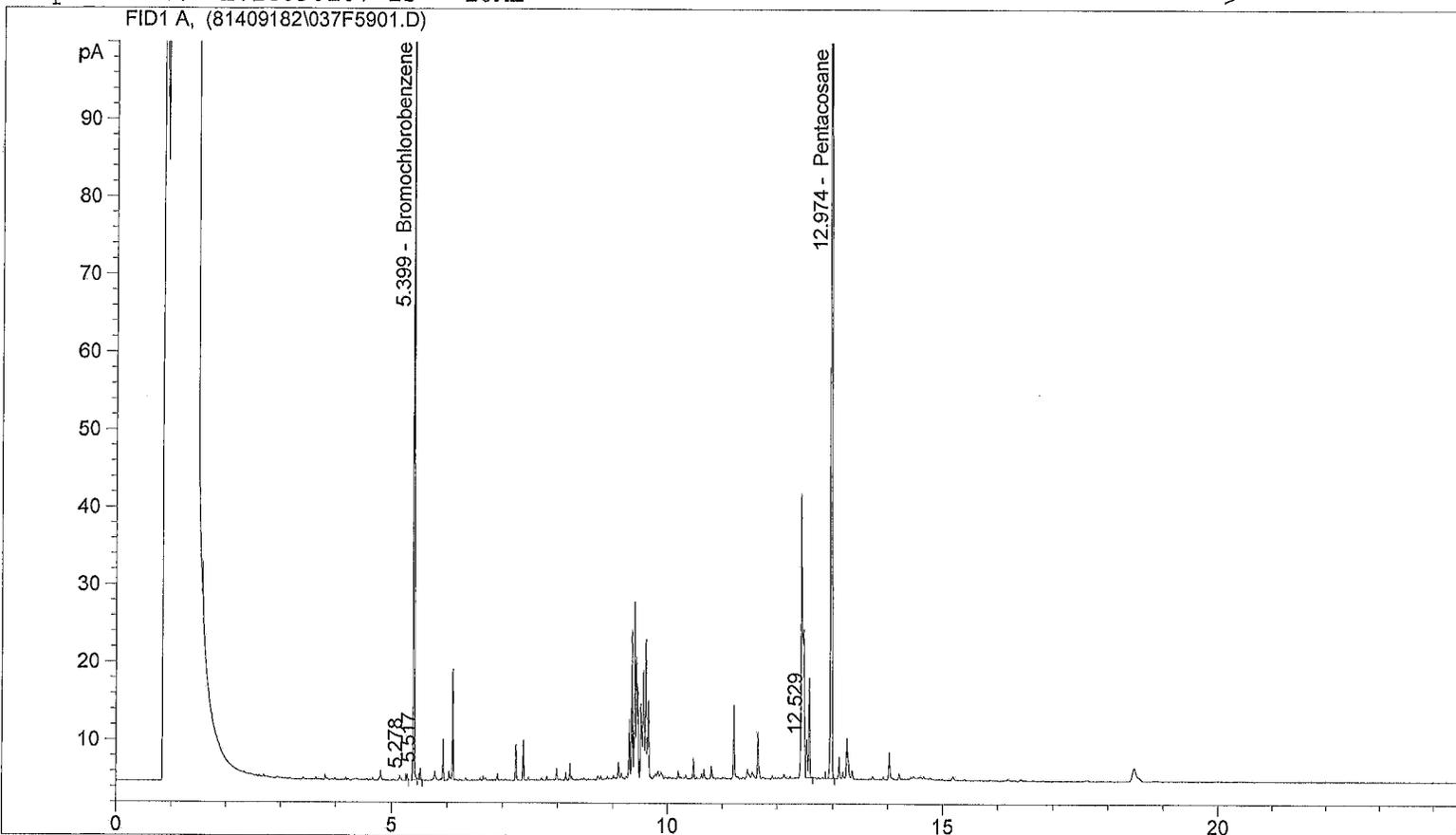
95%

0 < 310 µL

09-23-14 EBS

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\037F5901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 9/21/2014 4:46:06 AM 9/21/2014 4:46:06 AM
 Report Creation: 9/23/2014 11:23:46 AM

Sample Name: EV14090107-15 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	203.169	15.371
12.974		Pentacosane	297.124	9.125

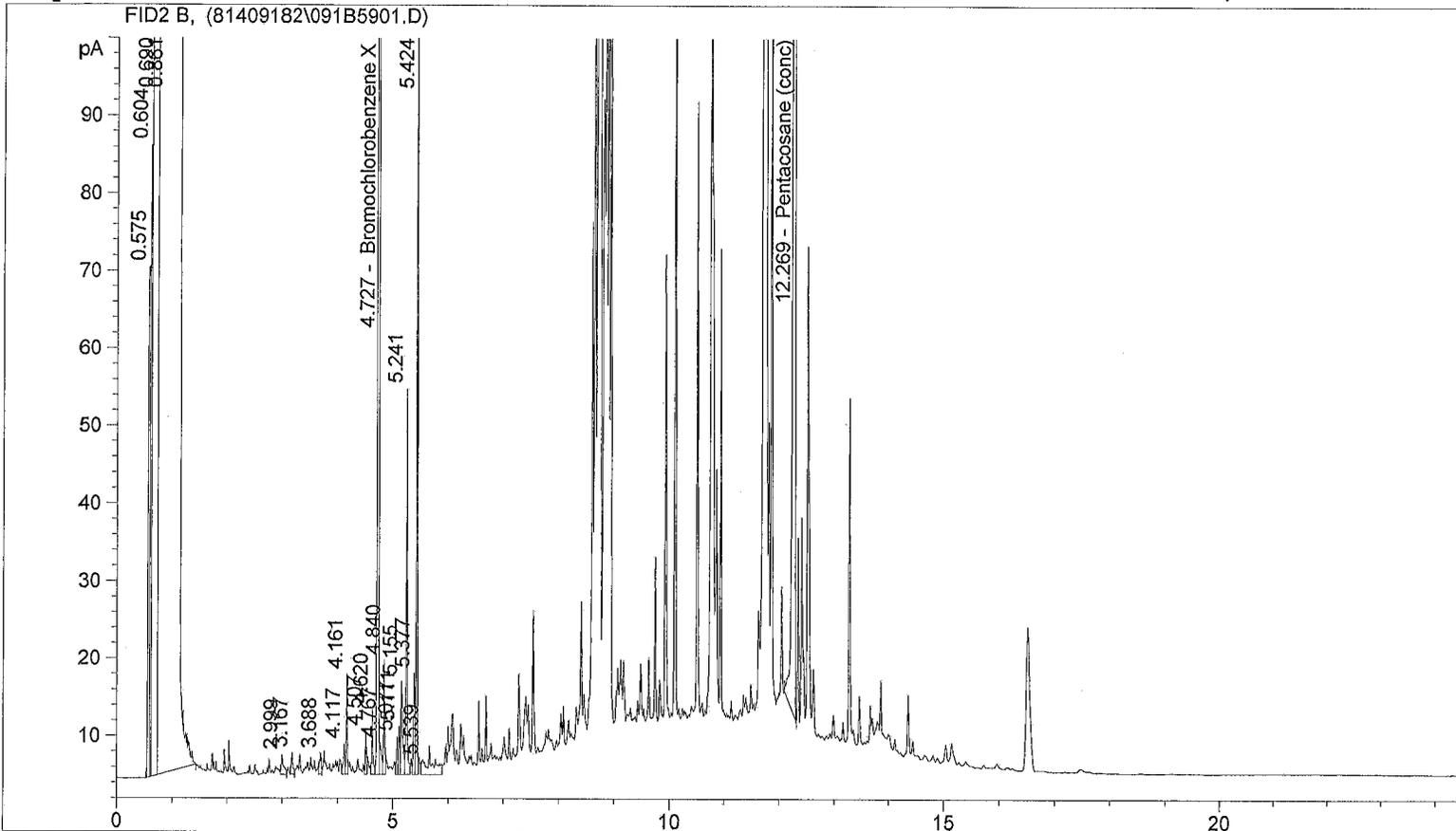
617.
917.

G < 130 ug/L
D < 310 ug/L

09.23.14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\091B5901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 9/21/2014 4:46:06 AM 9/21/2014 4:46:06 AM
 Report Creation: 9/23/2014 11:49:00 AM

Sample Name: EV14090107-15 1ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.727	FID2 B,	Bromochlorobenzene X	2116.631	164.801
12.269		Pentacosane (conc)	3033.530	94.333

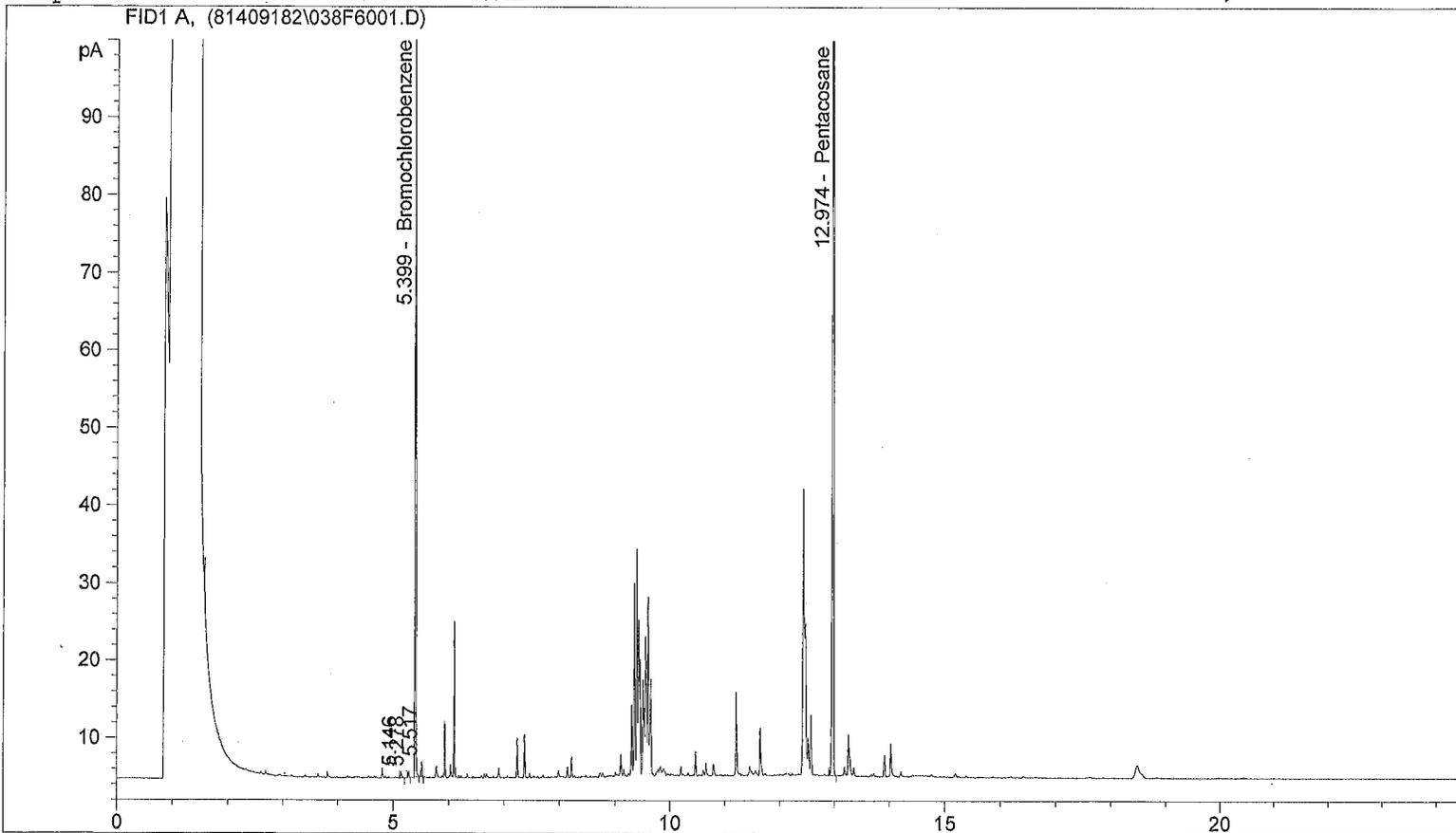
94%

0 < 310 ug/L

09.23.14/ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\038F6001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 9/21/2014 5:21:13 AM 9/21/2014 5:21:13 AM
 Report Creation: 9/23/2014 11:28:22 AM

Sample Name: EV14090107-16 10ML ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	209.388	15.842
12.974		Pentacosane	301.557	9.261

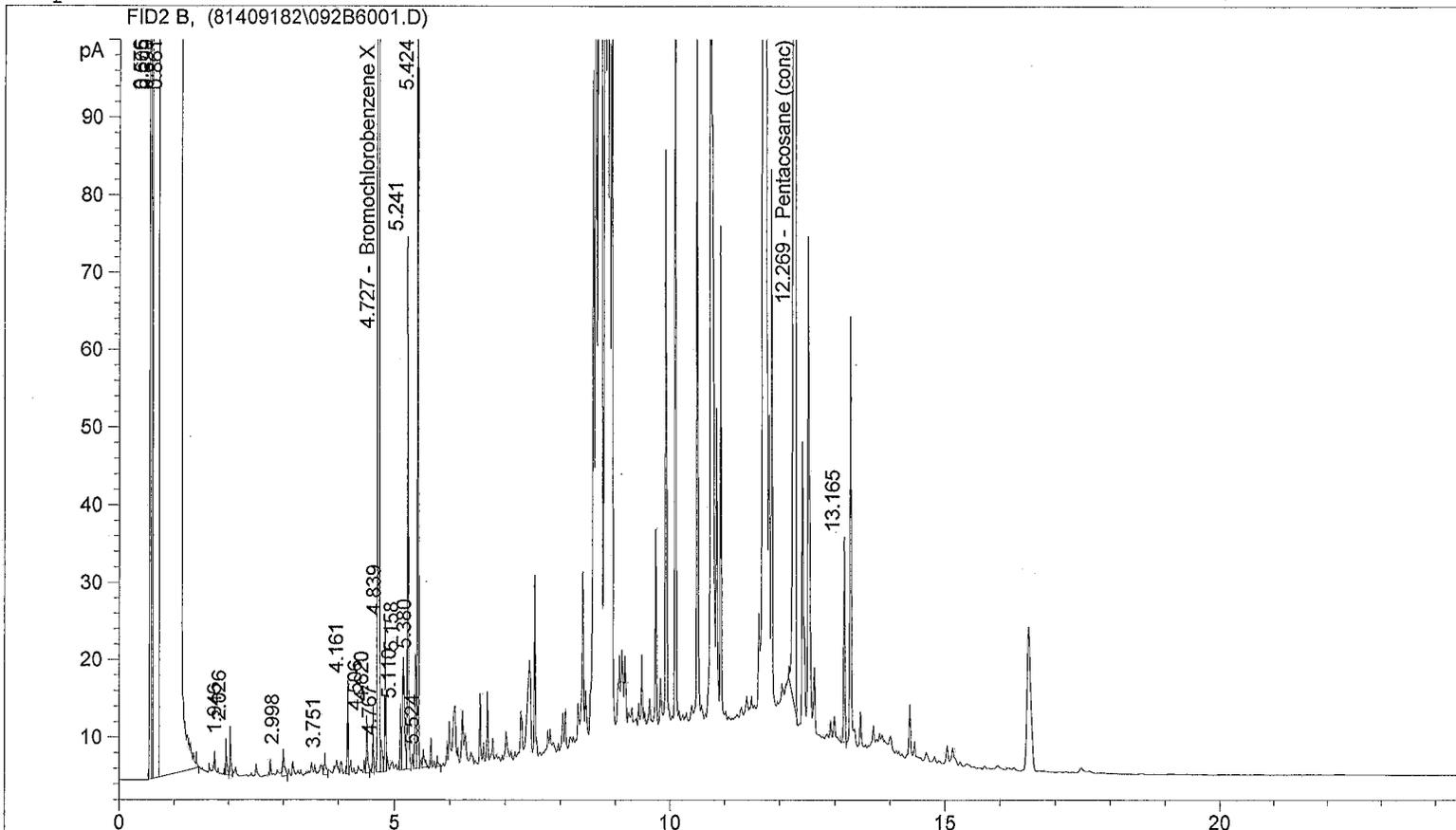
68%
93%

G < 130 ug/L
 D < 370 ug/L

09.23.14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\092B6001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 9/21/2014 5:21:13 AM 9/21/2014 5:21:13 AM
 Report Creation: 9/23/2014 11:49:19 AM

Sample Name: EV14090107-16 1ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.727	FID2 B,	Bromochlorobenzene X	2157.168	167.957
12.269		Pentacosane (conc)	3069.861	95.462

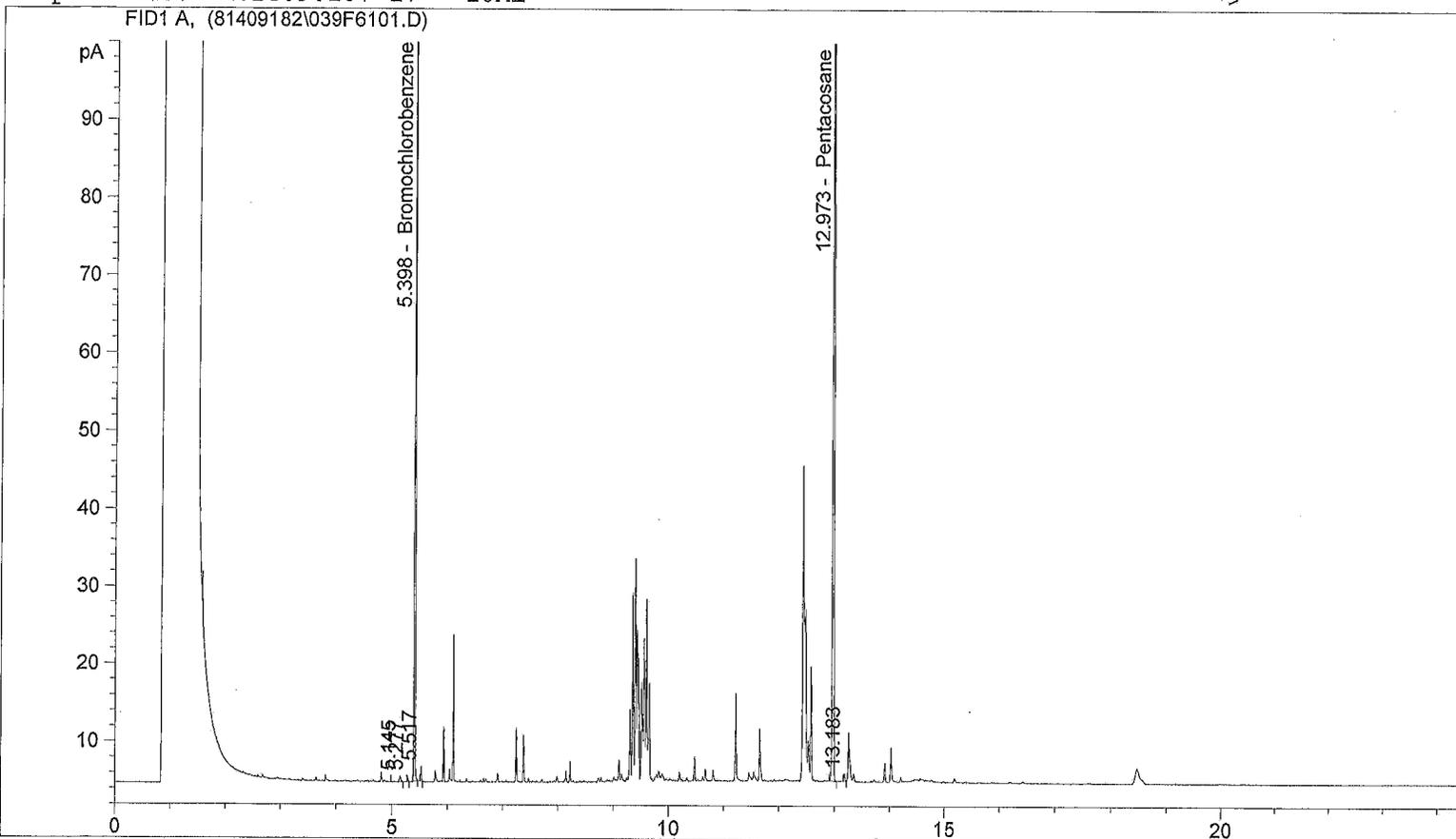
95%

0 < 310 ug/L

09.23.14ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\039F6101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCLDW.M
 Injection Date & Time: 9/21/2014 5:56:21 AM 9/21/2014 5:56:21 AM
 Report Creation: 9/23/2014 11:28:38 AM

Sample Name: EV14090107-17 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.398	FID1 A,	Bromochlorobenzene	176.517	13.355
12.973		Pentacosane	275.815	8.471

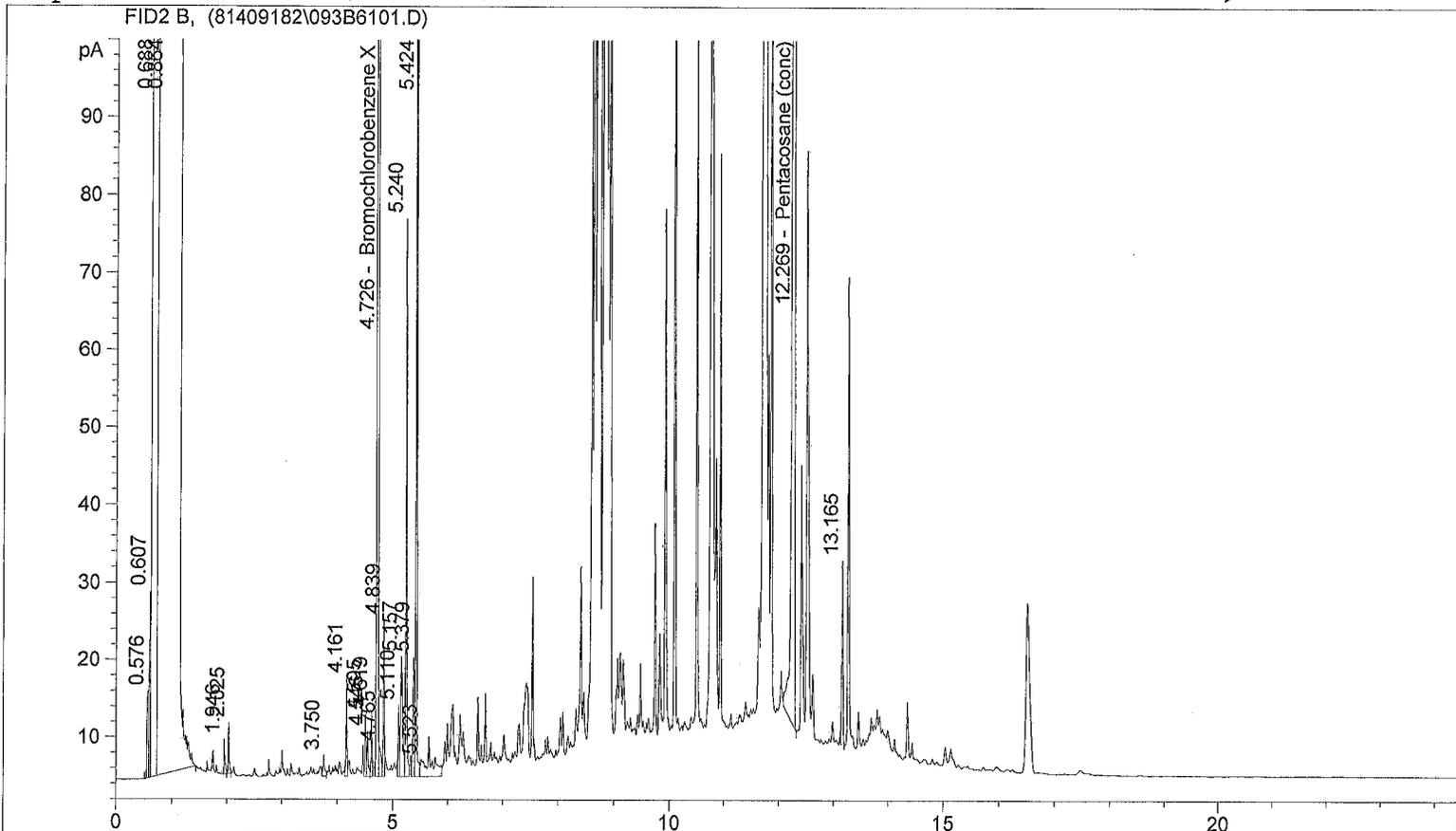
53%
85%

G < 130 µg/L
 D < 310 µg/L

09.23.14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\093B6101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 9/21/2014 5:56:21 AM 9/21/2014 5:56:21 AM
 Report Creation: 9/23/2014 11:49:36 AM

Sample Name: EV14090107-17 1ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.726	FID2 B,	Bromochlorobenzene X	1978.023	154.009
12.269		Pentacosane (conc)	3032.229	94.292

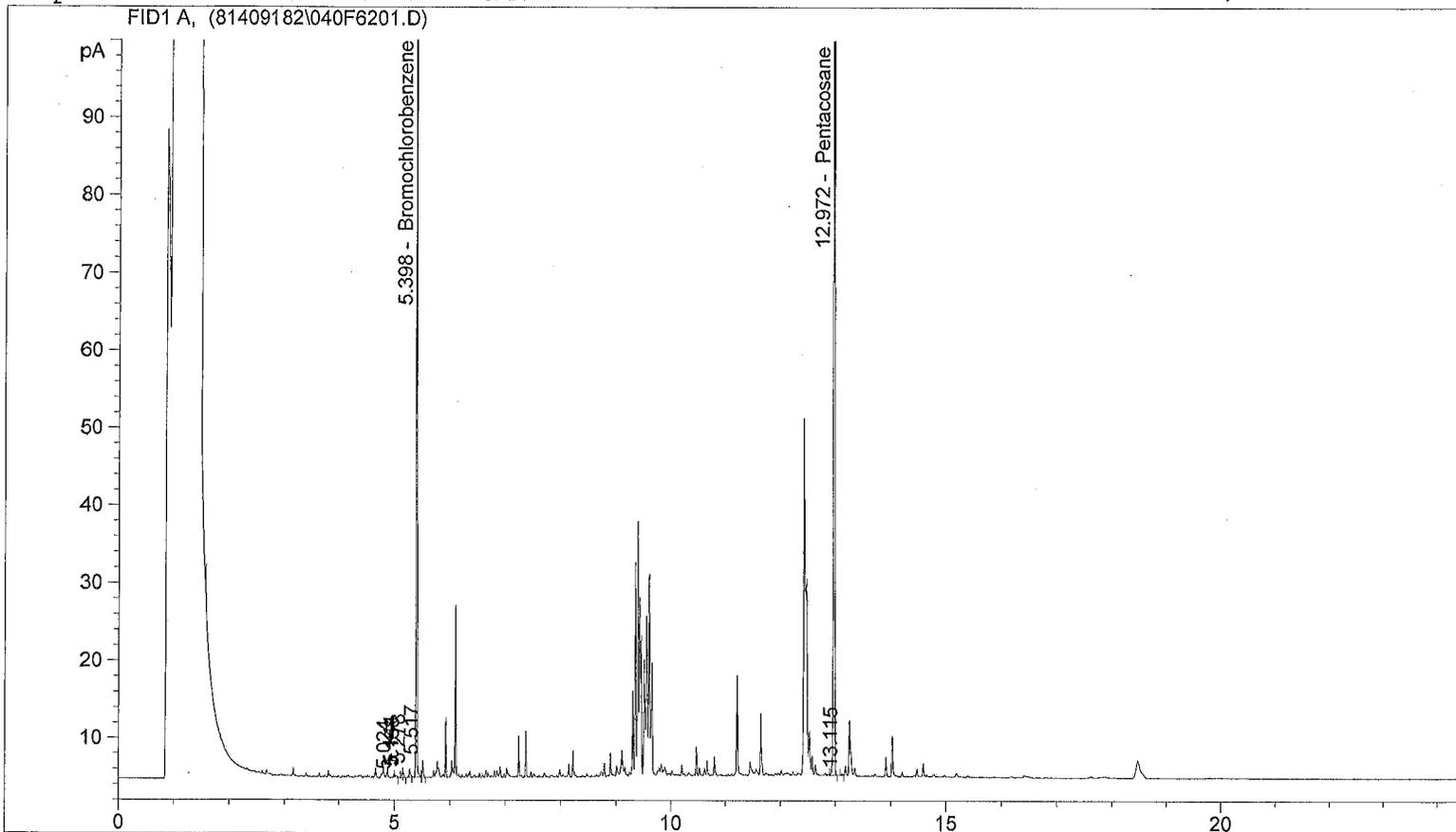
94%

O < 310 ug/L

09.23.14 EBS

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\040F6201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 9/21/2014 6:31:13 AM 9/21/2014 6:31:13 AM
 Report Creation: 9/23/2014 11:29:00 AM

Sample Name: EV14090107-18 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.398	FID1 A,	Bromochlorobenzene	193.064	14.607
12.972		Pentacosane	285.750	8.776

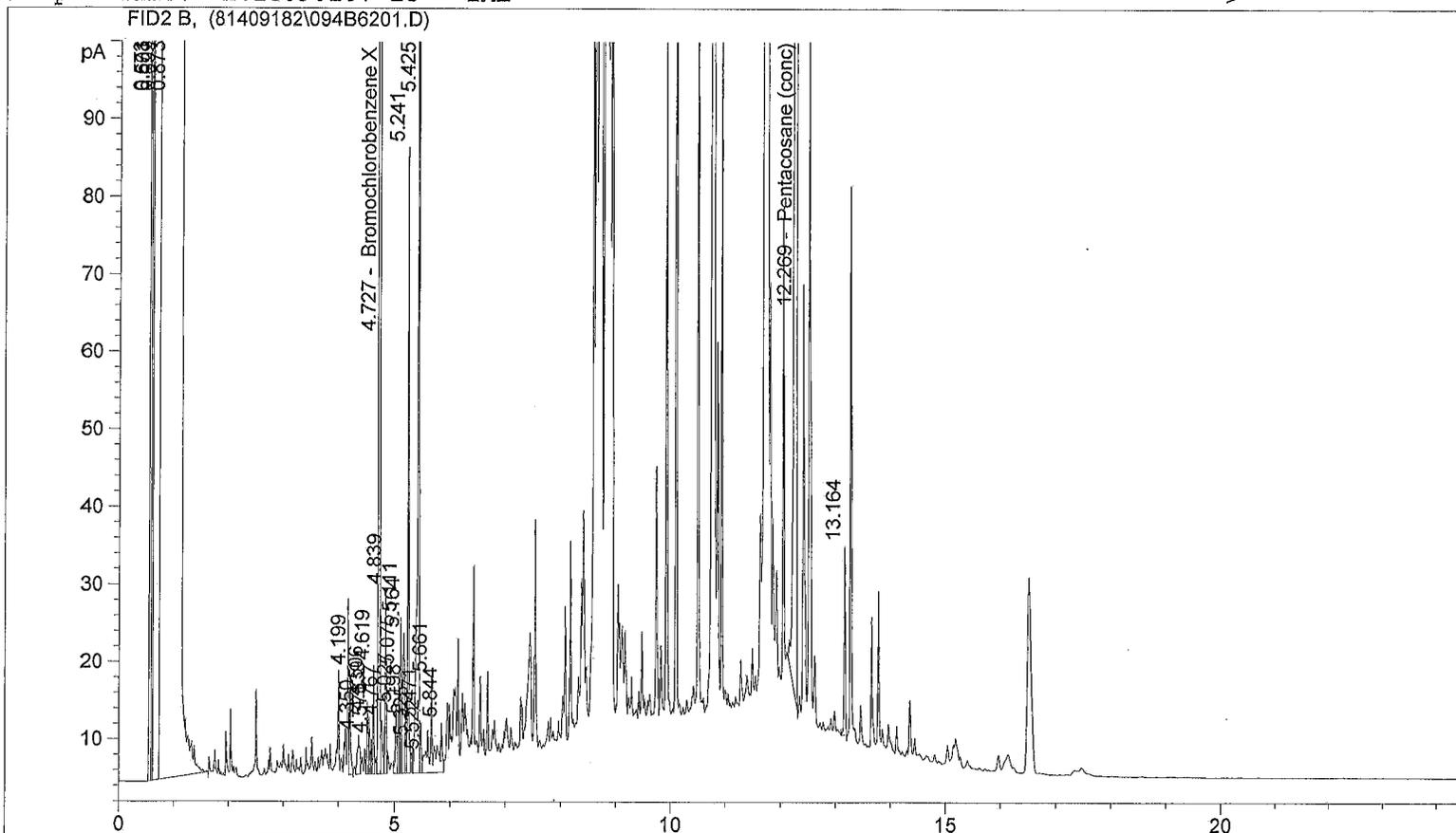
58%
88%

G < 130 ug/L
 D < 310 ug/L

09.23.14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\094B6201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 9/21/2014 6:31:13 AM 9/21/2014 6:31:13 AM
 Report Creation: 9/23/2014 11:49:53 AM

Sample Name: EV14090107-18 1ML



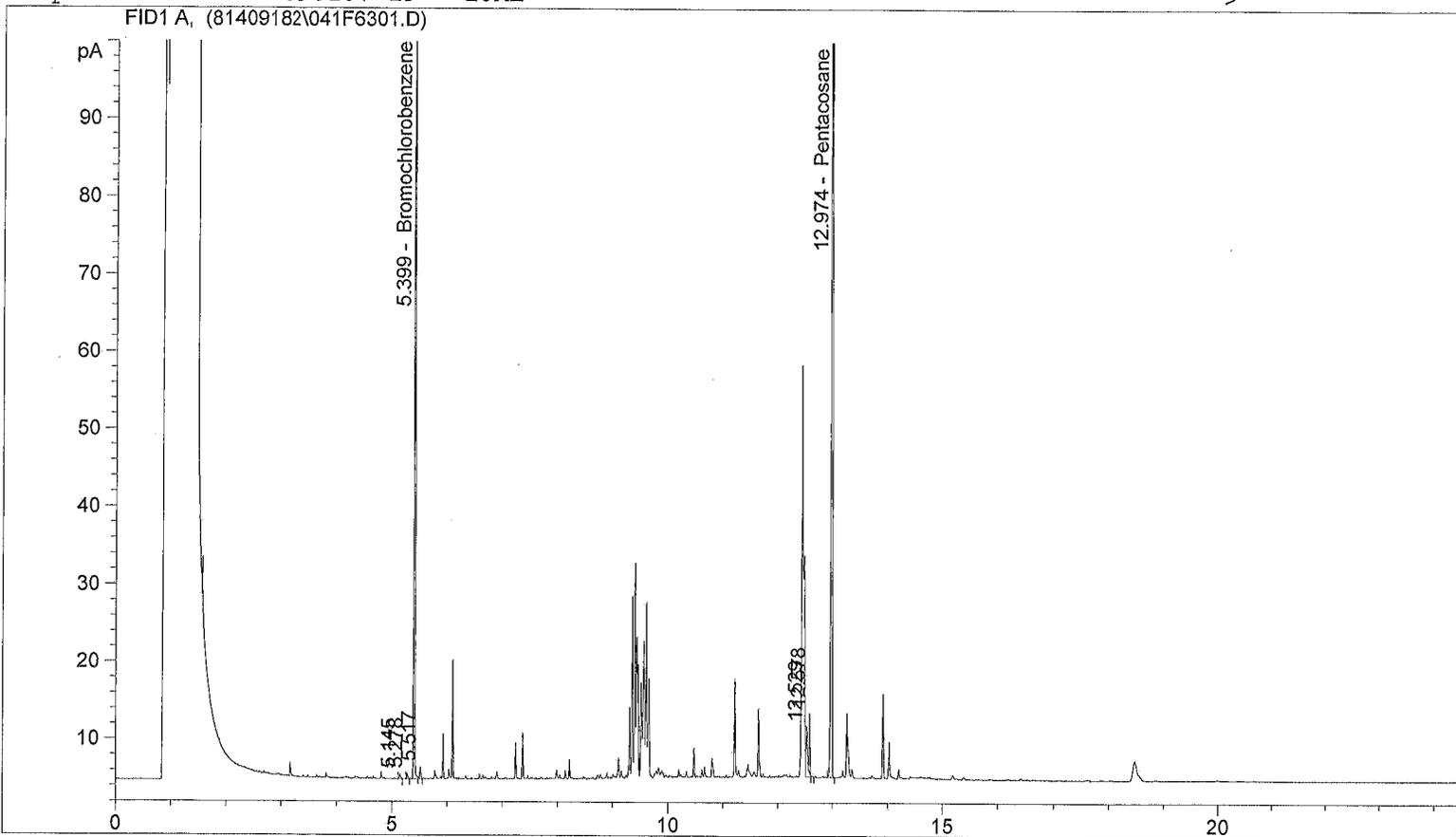
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.727	FID2 B,	Bromochlorobenzene X	2199.751	171.273
12.269		Pentacosane (conc)	3180.059	98.889

99%

0 < 310 ug/L

09.23.14 EBS

Sample Name: EV14090107-19 10ML



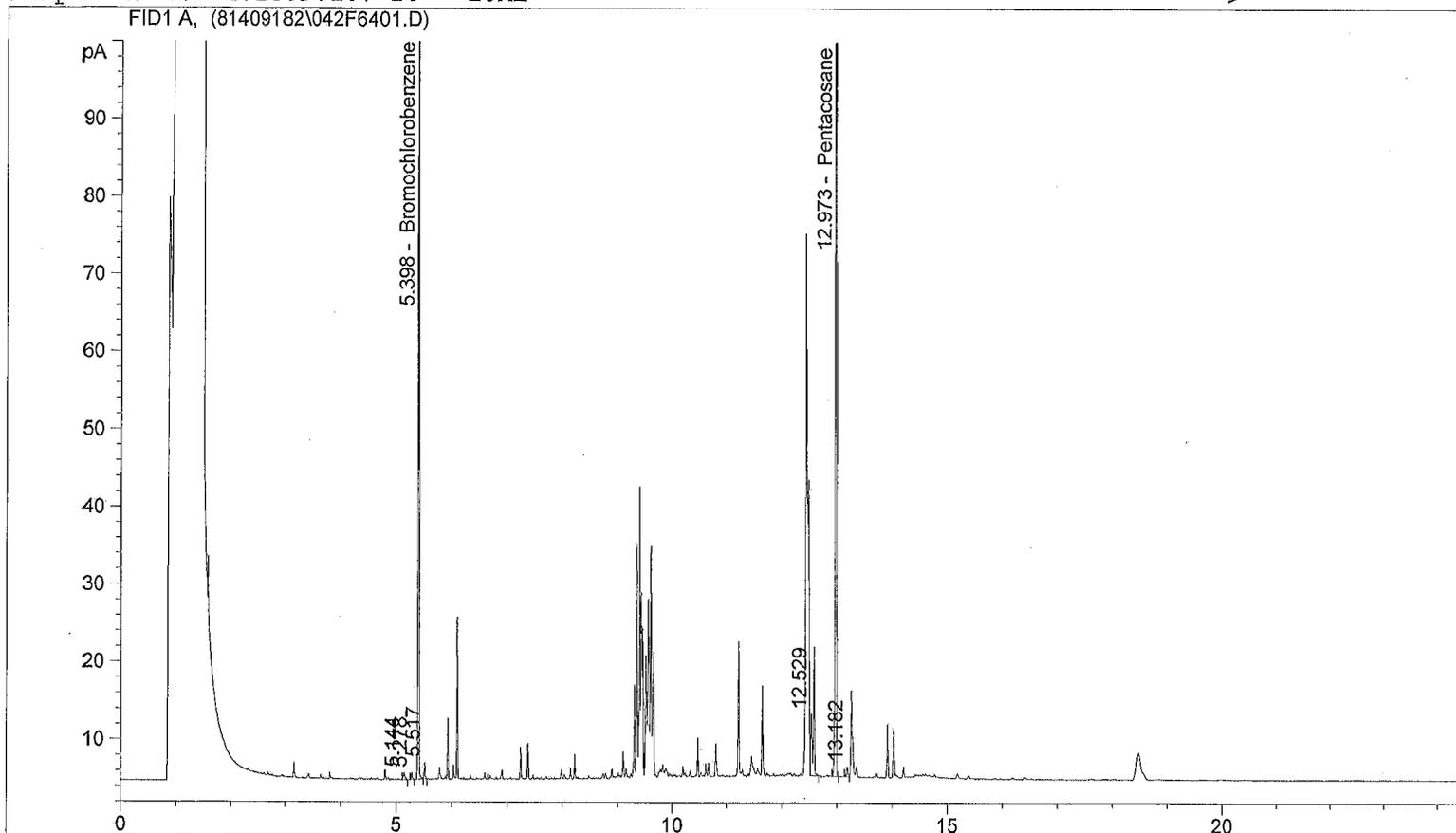
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	249.526	18.878
12.974		Pentacosane	298.699	9.173

76%
92%

G < 130 ug/L

D < 310 ug/L

Sample Name: EV14090107-20 10ML



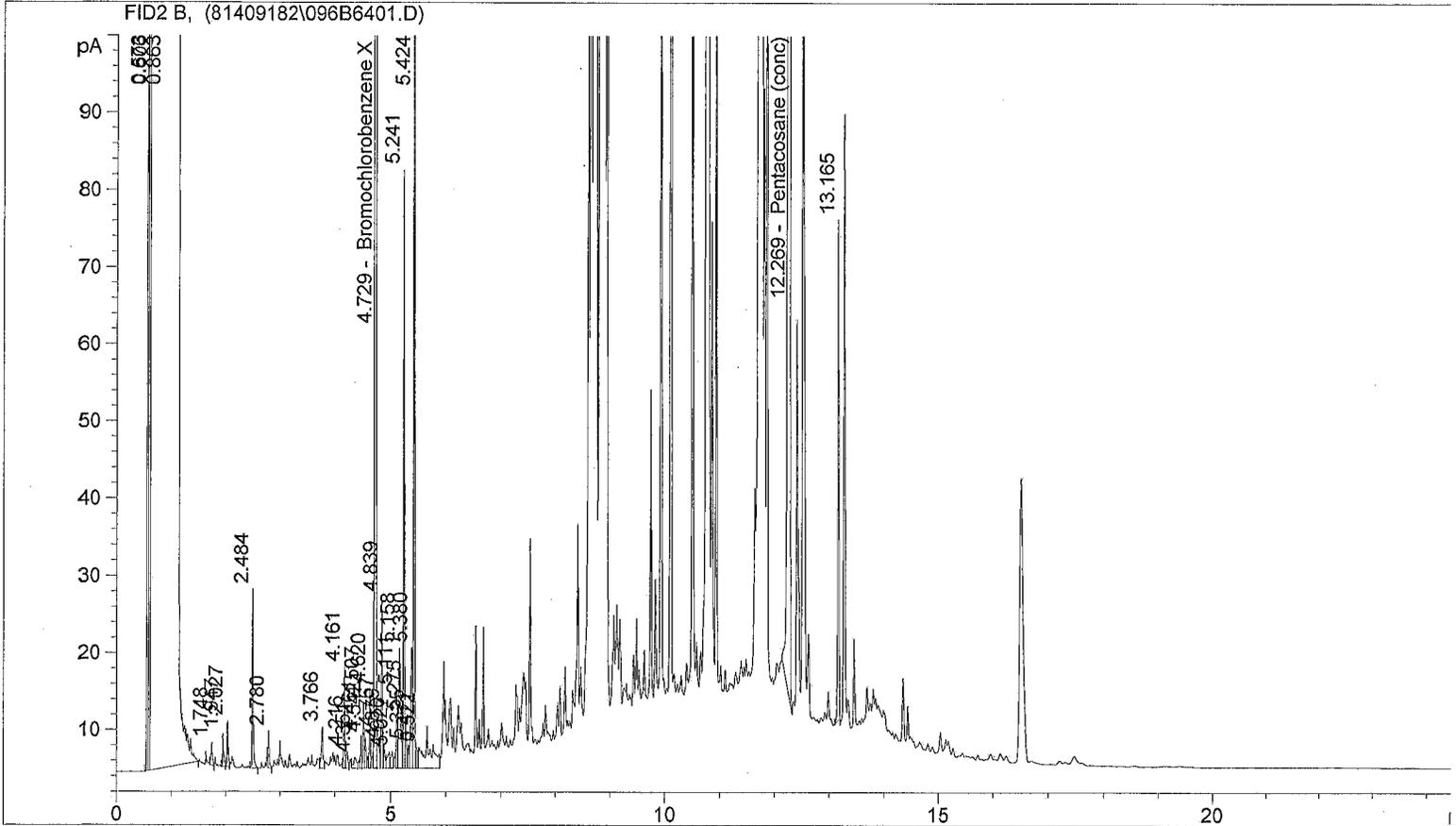
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.398	FID1 A,	Bromochlorobenzene	227.003	17.174
12.973		Pentacosane	298.109	9.155

69%
92%

G < 130 ug/L
 D < 310 ug/L

09.23.14 E

Sample Name: EV14090107-20 1ML



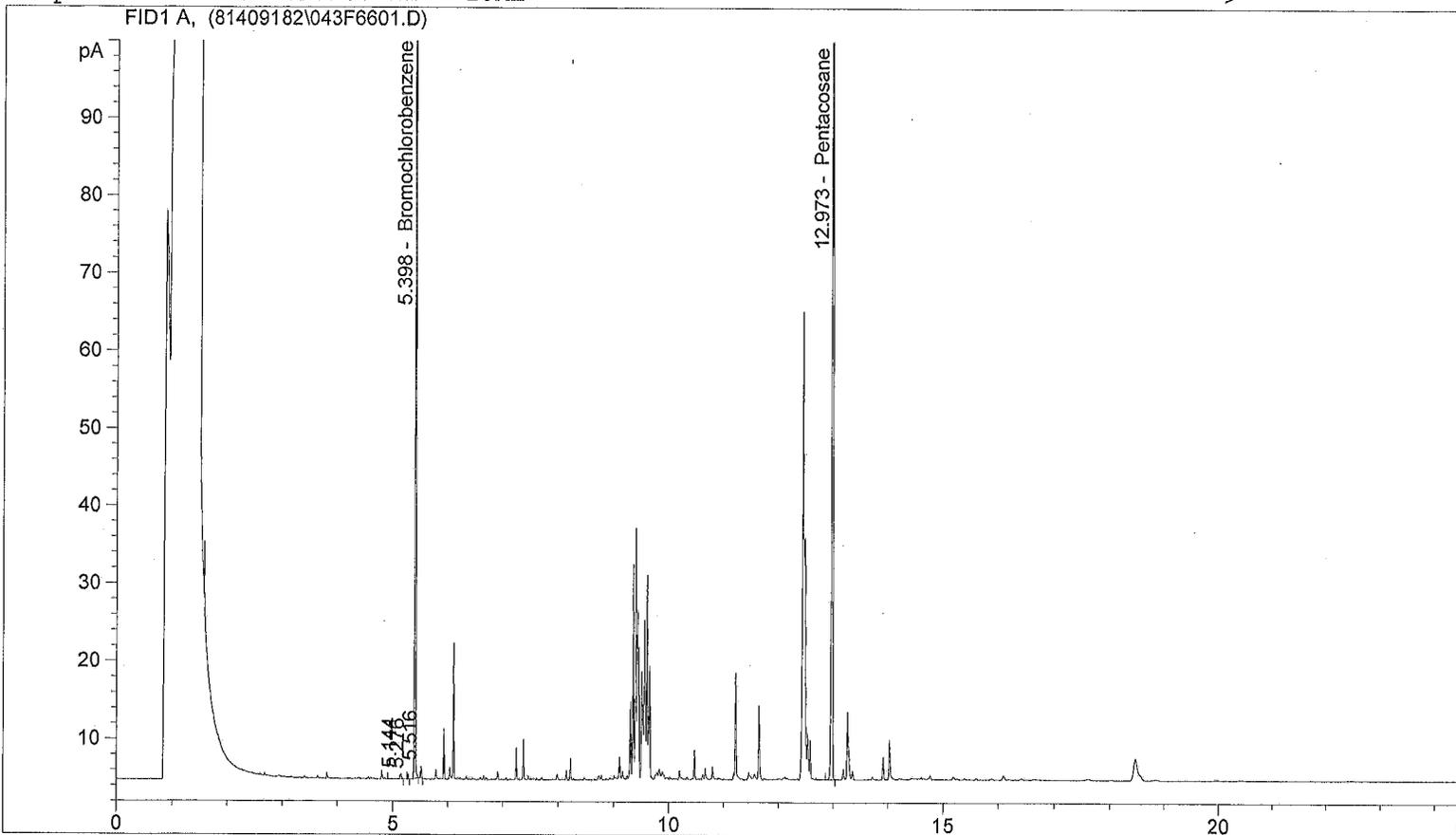
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.729	FID2 B,	Bromochlorobenzene X	2443.548	190.255
12.269		Pentacosane (conc)	3138.867	97.608

97%

0 < 310 ug/L

09.23.14 ES

Sample Name: EVI4090107-21 10ML



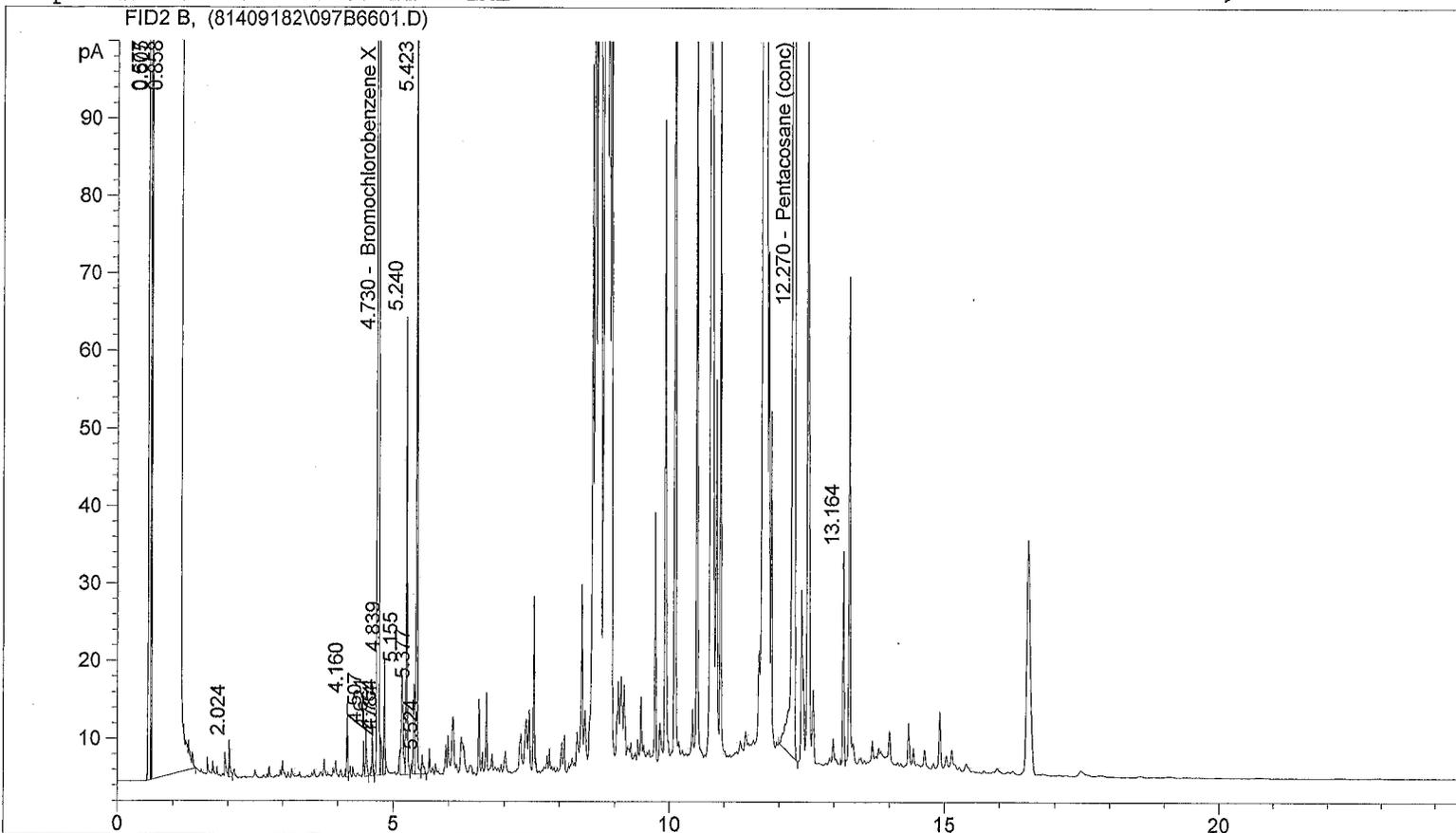
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.398	FID1 A,	Bromochlorobenzene	280.047	21.188
12.973		Pentacosane	311.342	9.562

85%
96%

G < 130 ug/L
 D < 310 ug/L

09.23.14 EBS

Sample Name: EV14090107-21 1ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.730	FID2 B,	Bromochlorobenzene X	2780.075	216.457
12.270		Pentacosane (conc)	3152.916	98.045

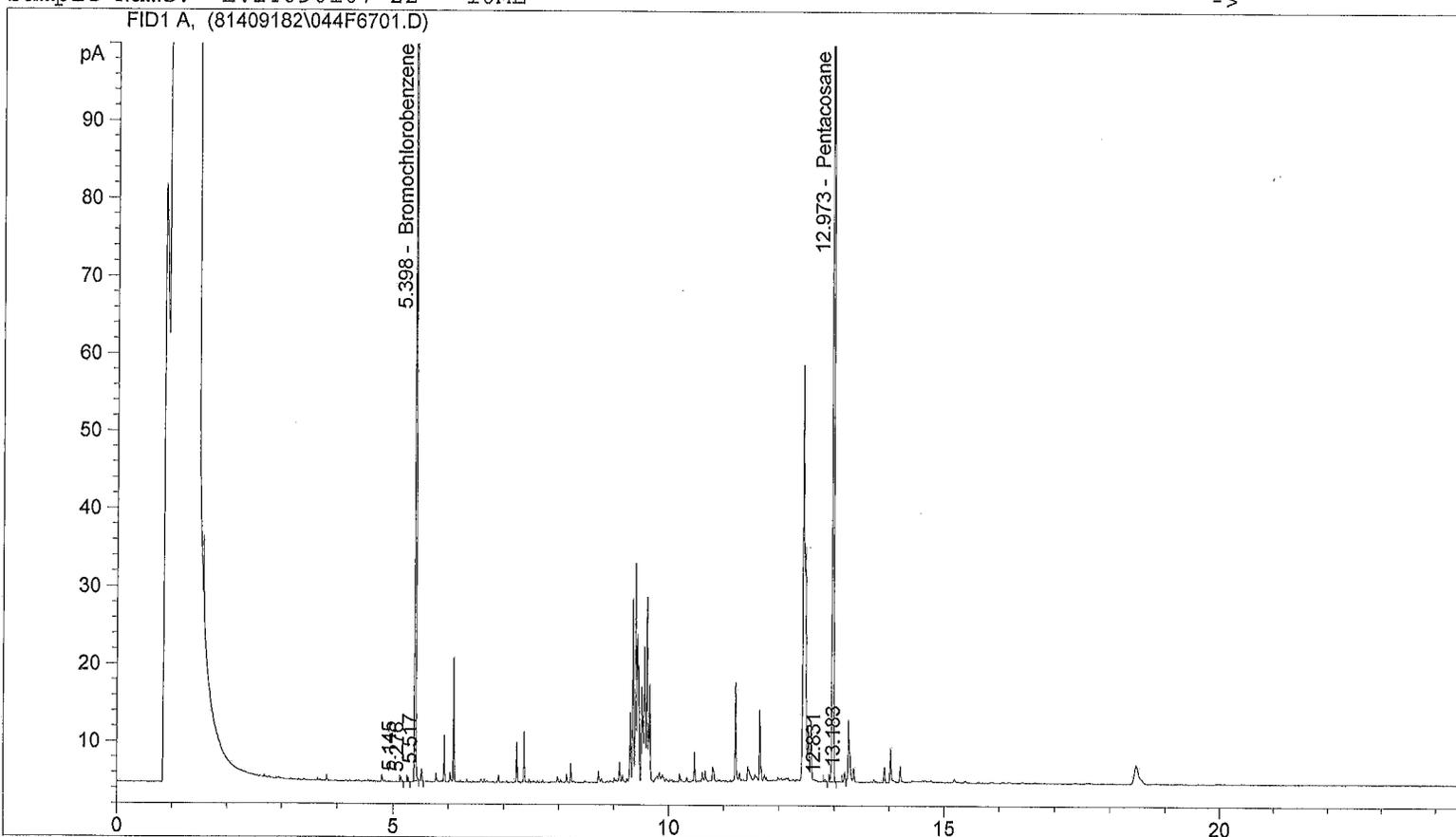
98%

0 < 310 µg/L

09.23.14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\044F6701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 9/21/2014 9:25:24 AM 9/21/2014 9:25:24 AM
 Report Creation: 9/23/2014 11:32:28 AM

Sample Name: EV14090107-22 10ML



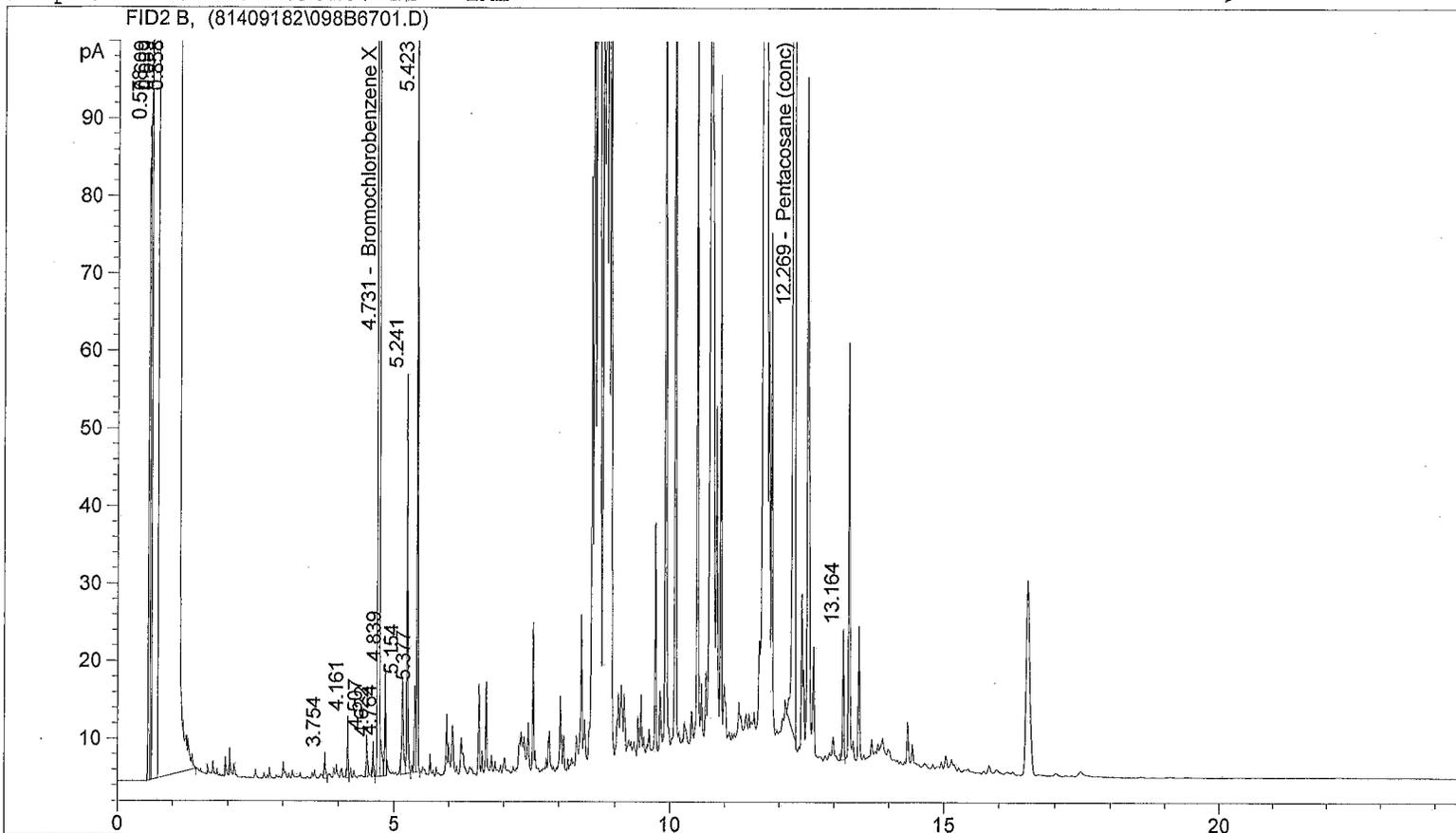
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.398	FID1 A,	Bromochlorobenzene	295.200	22.334
12.973		Pentacosane	324.816	9.976

89%
100%

G < 130 ug/L
 D < 310 ug/L

09.23.14 E

Sample Name: EV14090107-22 1ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.731	FID2 B,	Bromochlorobenzene X	2833.549	220.620
12.269		Pentacosane (conc)	3061.995	95.218

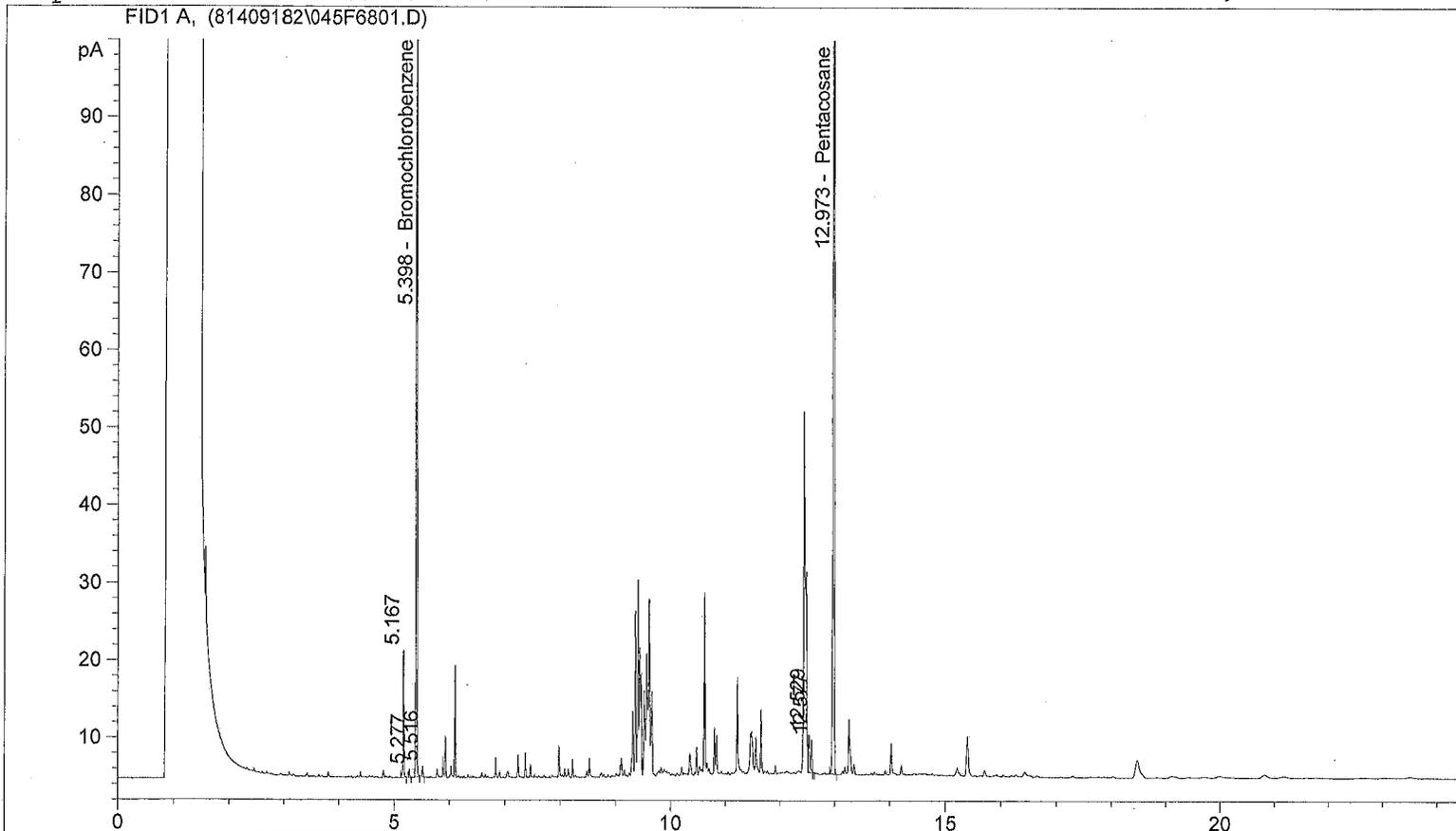
95%

0 < 310 ug/L
 0 < 250 ug/L

09.23.14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\045F6801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 9/21/2014 10:00:19 AM 9/21/2014 10:00:19 AM
 Report Creation: 9/23/2014 11:32:47 AM

Sample Name: EV14090107-23 10ML



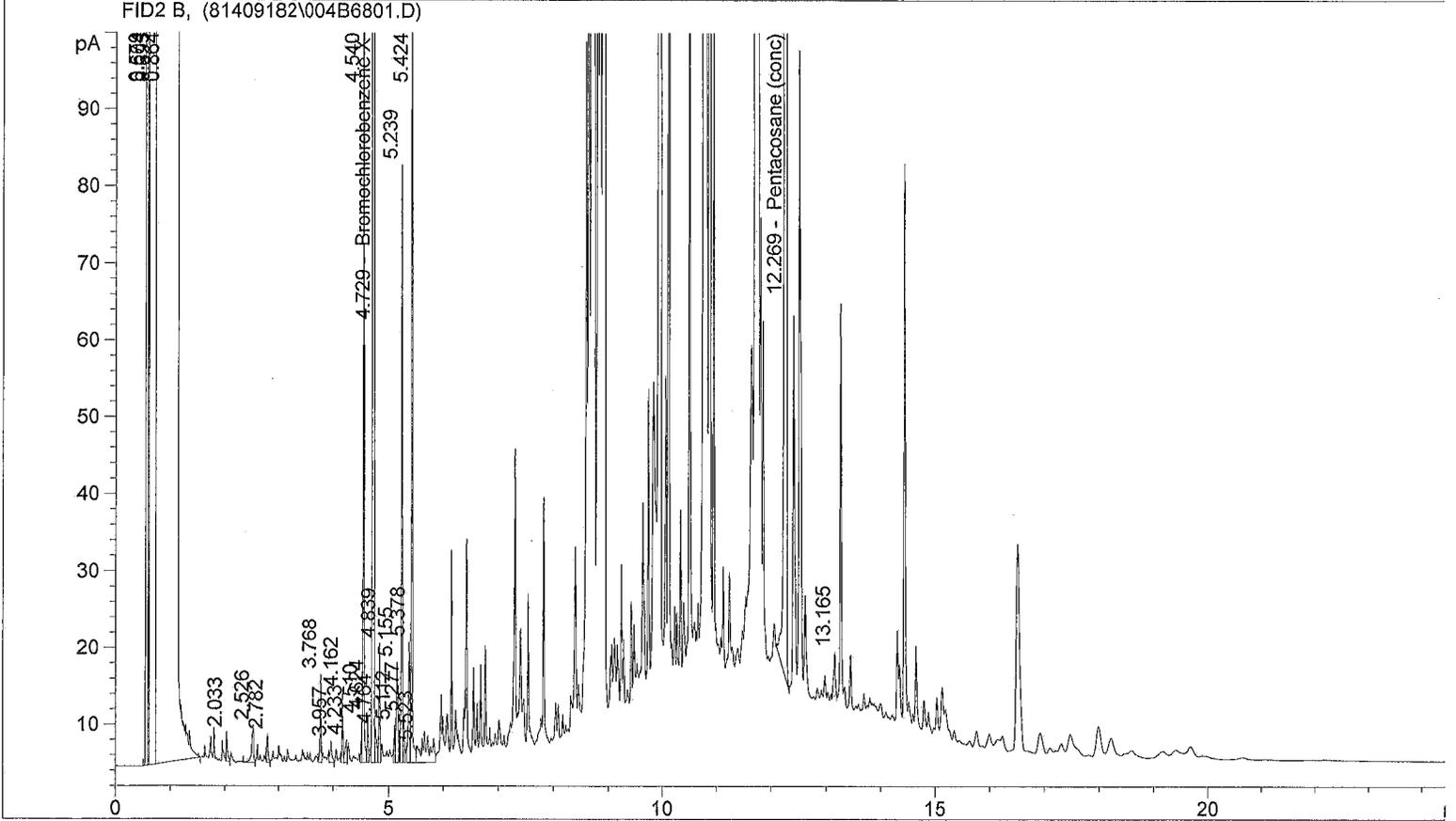
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.398	FID1 A,	Bromochlorobenzene	224.722	17.002
12.973		Pentacosane	278.425	8.551

68%
86%

G < 130 ug/L
 D < 310 ug/L

09.27.14 E

Sample Name: EV14090107-23 1ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.729	FID2 B,	Bromochlorobenzene X	2485.791	193.544
12.269		Pentacosane (conc)	3071.587	95.516

96%

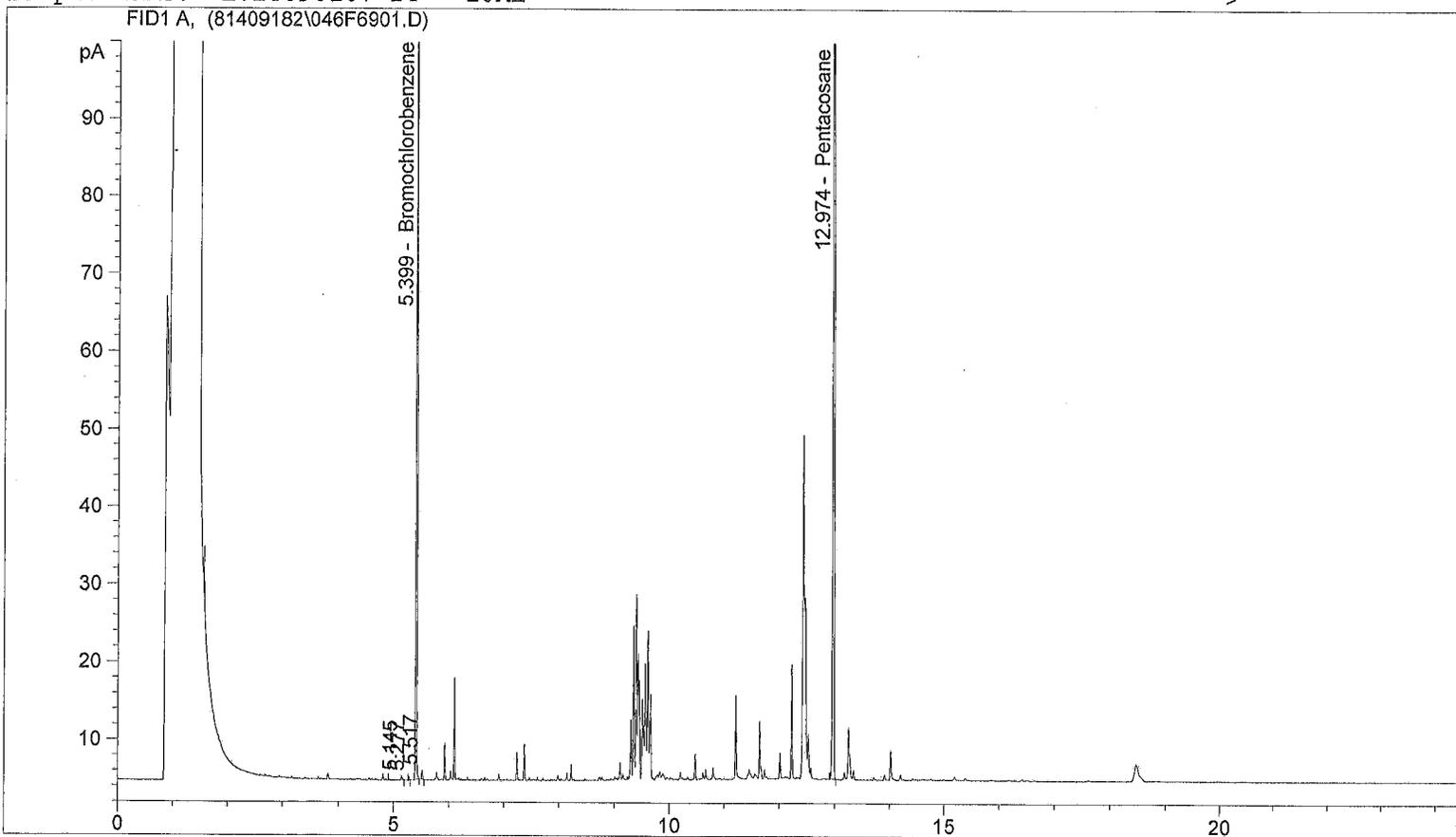
0.2310 mL

← ES

09.23.14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\046F6901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 9/21/2014 10:35:19 AM 9/21/2014 10:35:19 AM
 Report Creation: 9/23/2014 11:33:02 AM

Sample Name: EV14090107-24 10ML

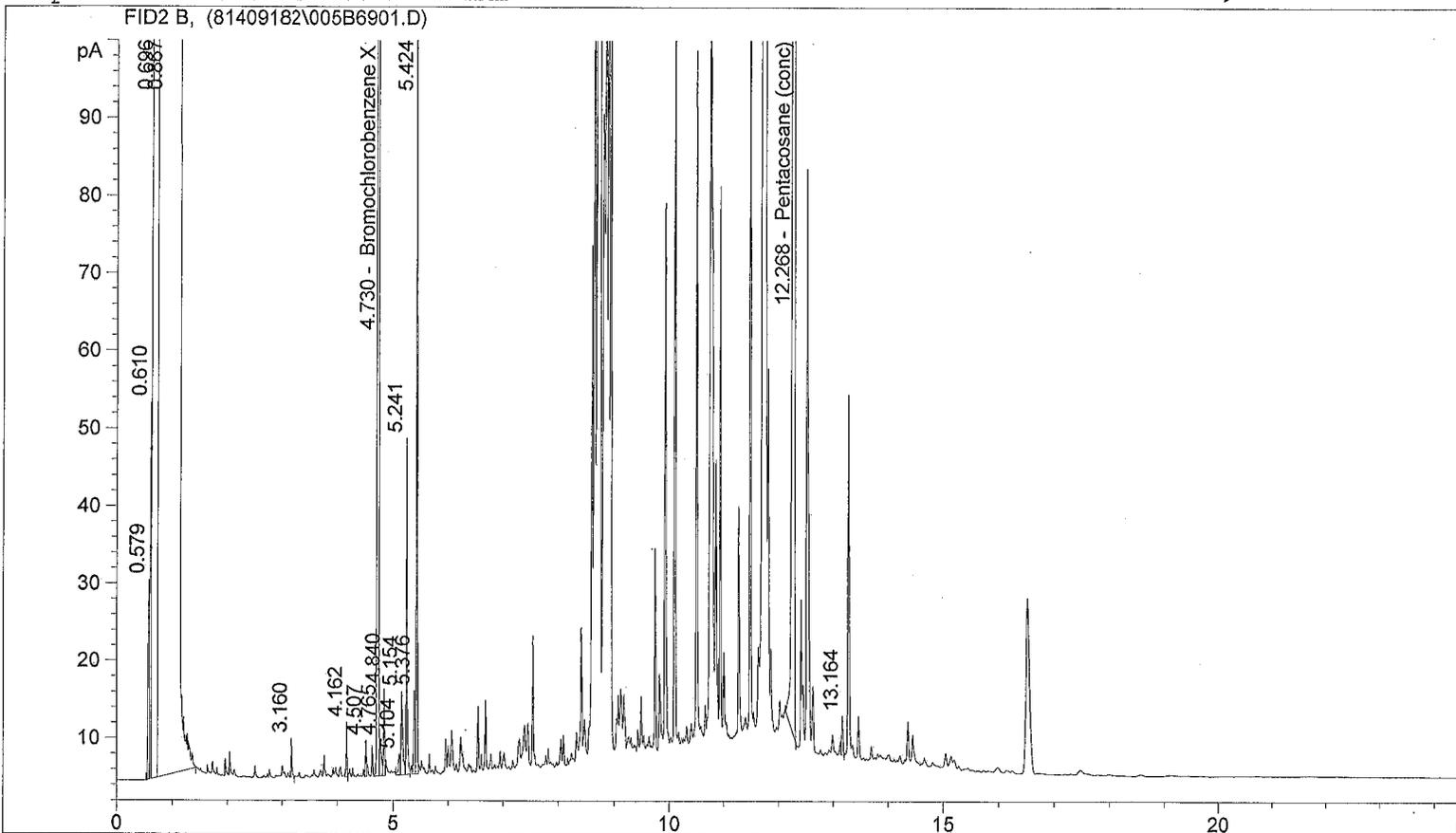


Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
5.399	FID1 A,	Bromochlorobenzene	255.570	19.336	77%
12.974		Pentacosane	314.618	9.662	97%

G < 130 ug/L
 D < 310 ug/L

09.23.14 E

Sample Name: EV14090107-24 1ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.730	FID2 B,	Bromochlorobenzene X	2533.389	197.250
12.268		Pentacosane (conc)	3064.294	95.289

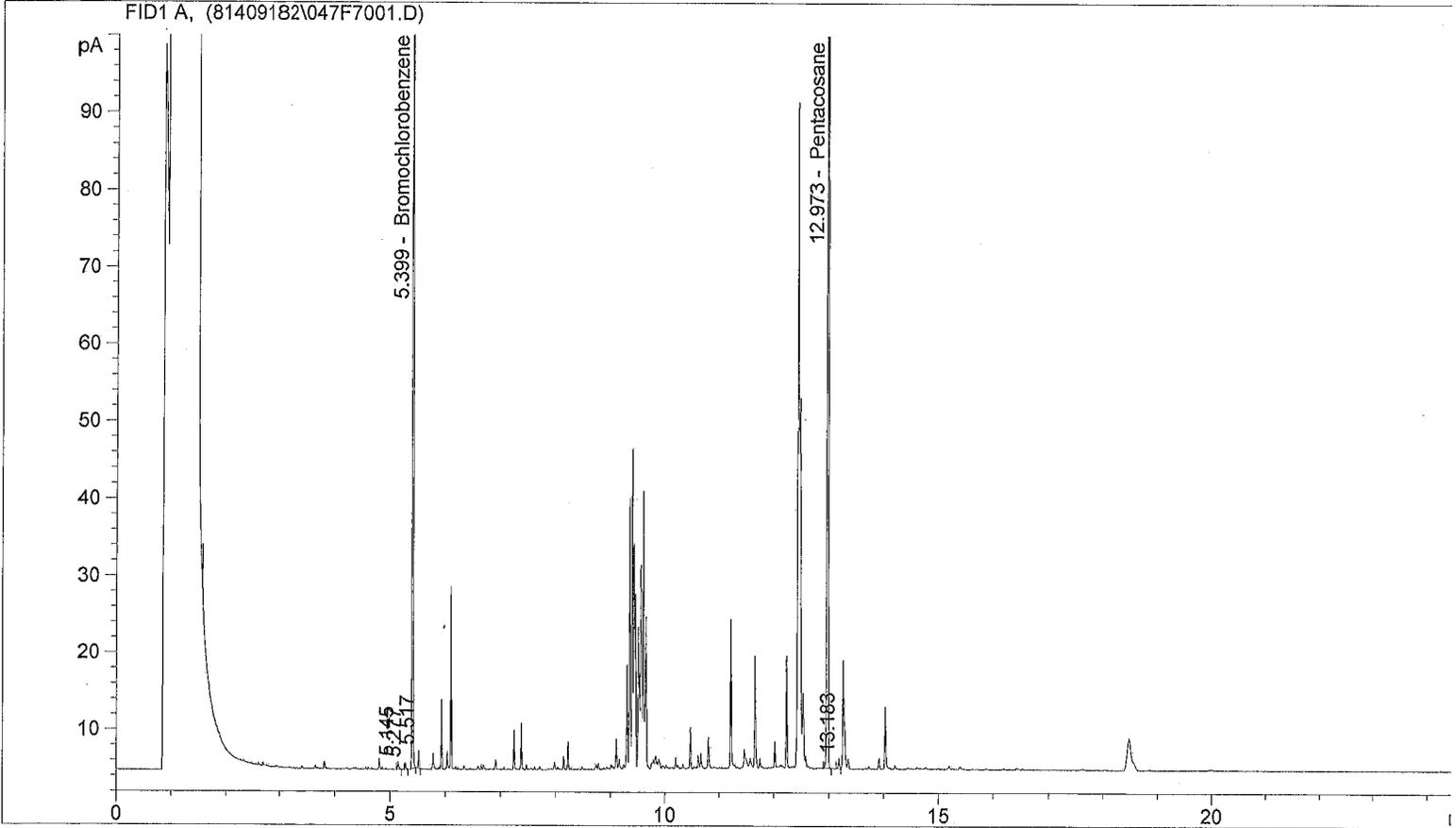
95%

0 < 310 µg/L

09-23-14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\047F7001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 9/21/2014 11:10:29 AM 9/21/2014 11:10:29 AM
 Report Creation: 9/23/2014 11:33:17 AM

Sample Name: EV14090107-25 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.399	FID1 A,	Bromochlorobenzene	287.891	21.781
12.973		Pentacosane	304.696	9.358

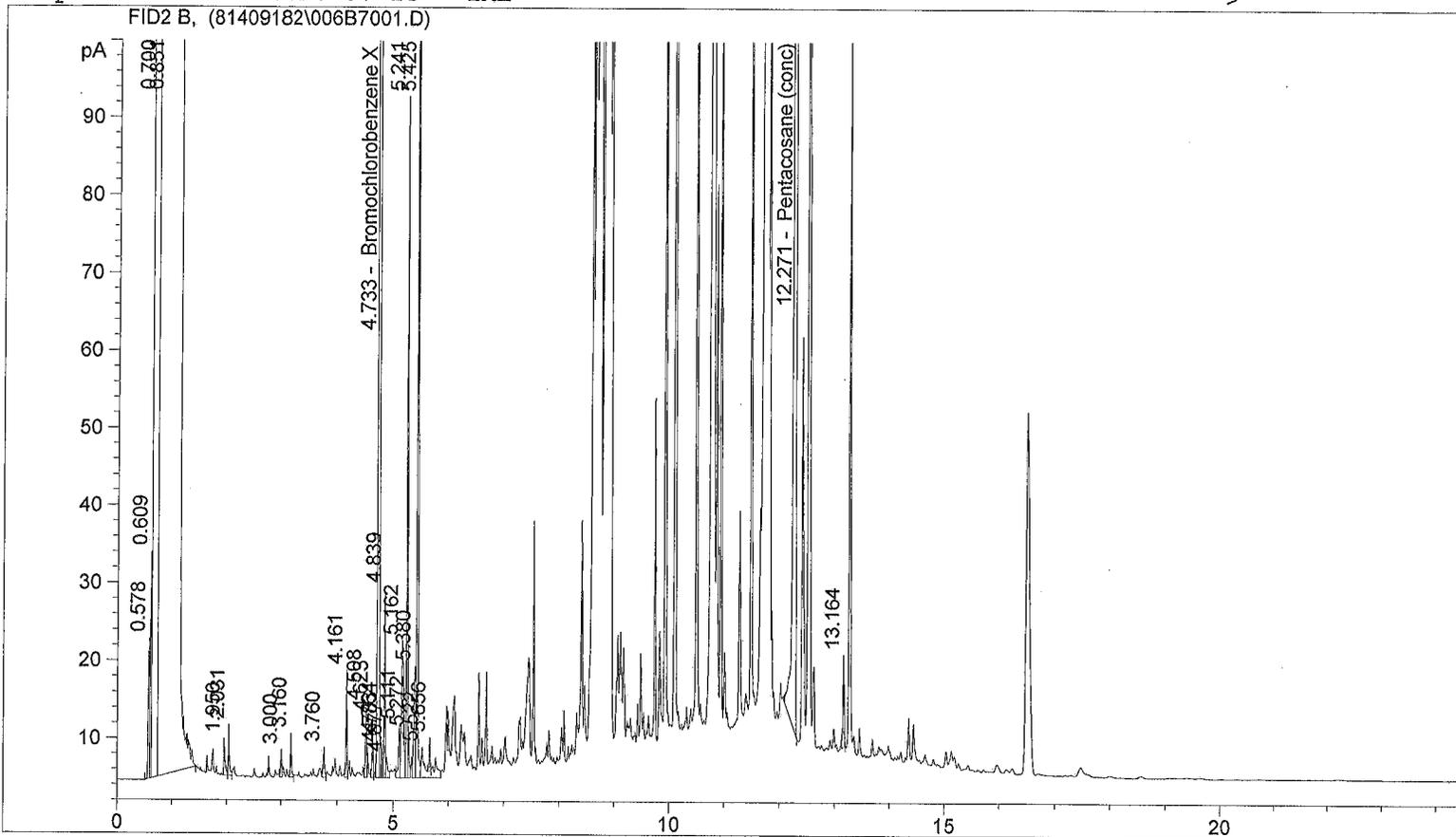
87%
94%

G < 130 ug/L
 D < 310 ug/L

09.23.14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81409182\006B7001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 9/21/2014 11:10:29 AM 9/21/2014 11:10:29 AM
 Report Creation: 9/23/2014 11:54:26 AM

Sample Name: EV14090107-25 1ML



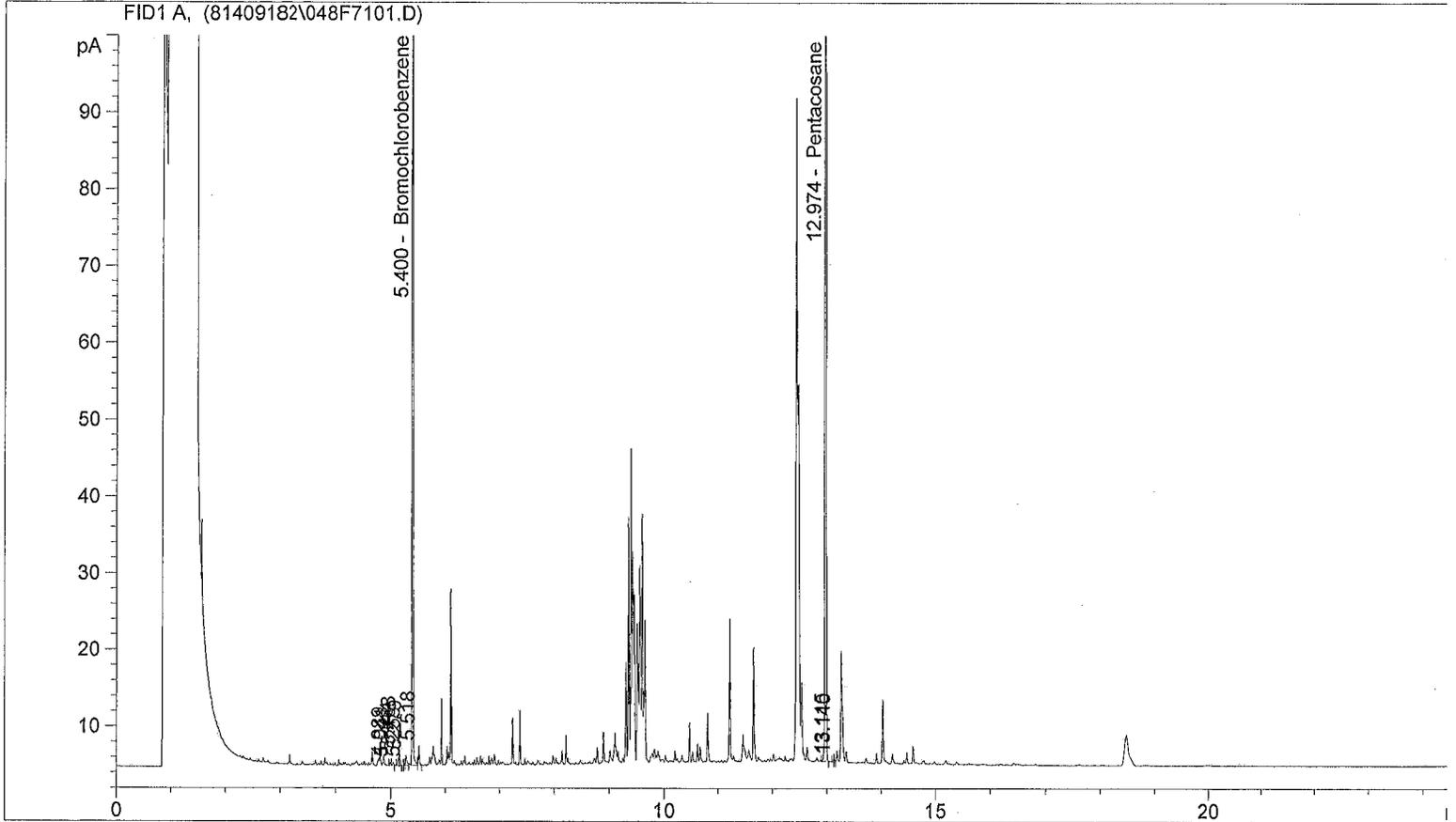
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.733	FID2 B,	Bromochlorobenzene X	3112.478	242.337
12.271		Pentacosane (conc)	3218.953	100.099

100%

0.2310 mL

09.23.14 E

Sample Name: EV14090107-26 10ML



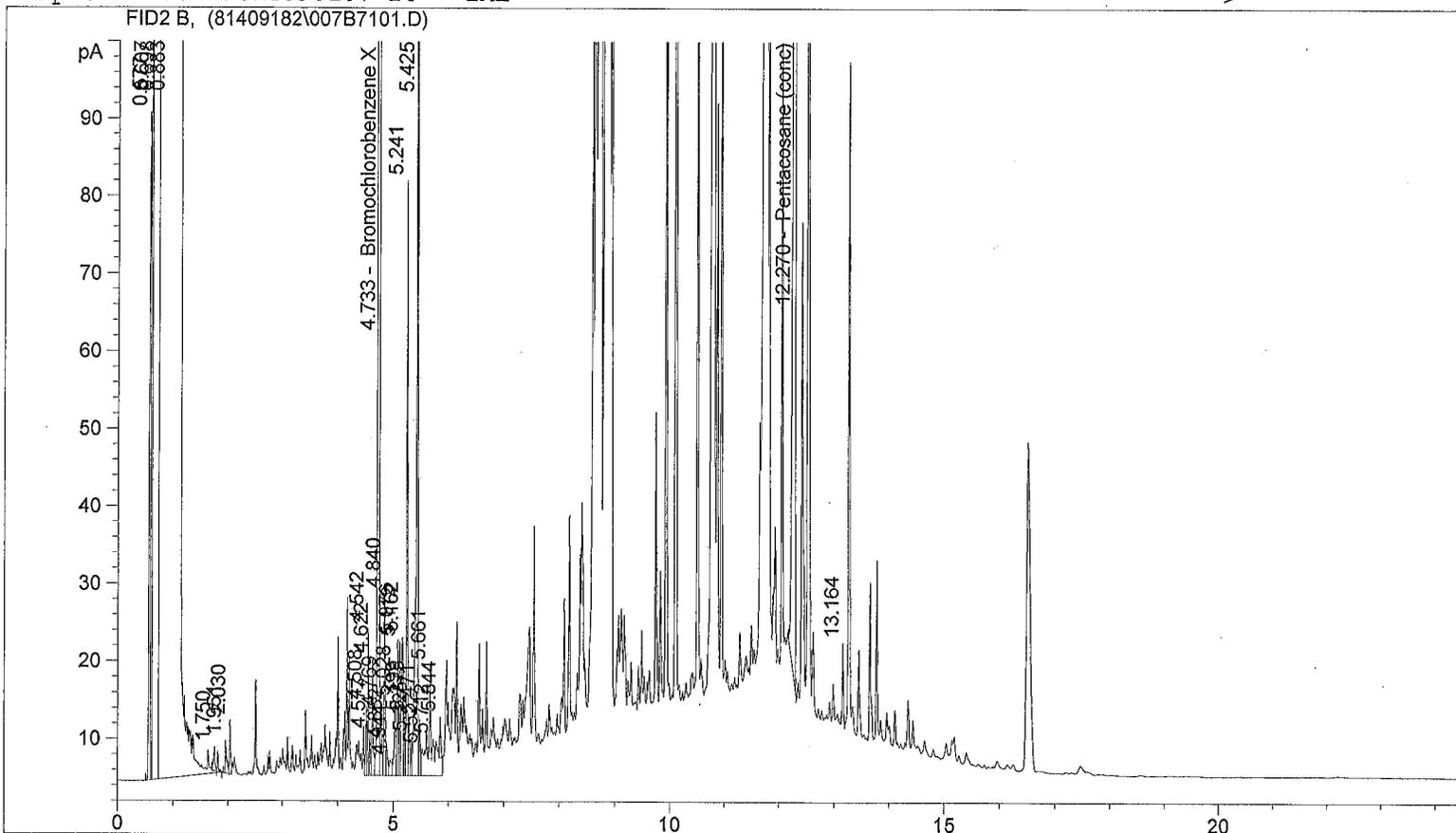
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.400	FID1 A,	Bromochlorobenzene	315.436	23.865
12.974		Pentacosane	319.850	9.823

95%
98%

G < 130 ug/L
 D < 310 ug/L

09.23.14E

Sample Name: EV14090107-26 1ML ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.733	FID2 B,	Bromochlorobenzene X	3102.167	241.535
12.270		Pentacosane (conc)	3065.511	95.327

95%

0 < 310 ug/L

09.23.14 E



December 1, 2014

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On October 31st, 3 samples were received by our laboratory and assigned our laboratory project number EV14100222. The project was identified as your Closed Former Landfill / #1148008. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-01
CLIENT SAMPLE ID	GP-26 (7.5-8.5)-10292014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/29/2014 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	11/12/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	11/12/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	11/12/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Vinyl Chloride	EPA-8260	U	0.058	1	ug/Kg	11/01/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Acetone	EPA-8260	250	230	1	ug/Kg	11/03/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	11/01/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	11/01/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Bromodichloromethane	EPA-8260	U	1.4	1	ug/Kg	11/01/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	1.5	1	ug/Kg	11/01/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-01
CLIENT SAMPLE ID	GP-26 (7.5-8.5)-10292014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/29/2014 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	11/01/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	11/01/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	1.6	1	ug/Kg	11/01/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	1.6	1	ug/Kg	11/01/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Naphthalene	EPA-8270 SIM	120	20	1	ug/Kg	11/12/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	22	20	1	ug/Kg	11/12/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	79	1	ug/Kg	11/12/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-01
CLIENT SAMPLE ID	GP-26 (7.5-8.5)-10292014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/29/2014 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	100	20	1	ug/Kg	11/12/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Fluoranthene	EPA-8270 SIM	120	20	1	ug/Kg	11/12/2014	GAP
Pyrene	EPA-8270 SIM	93	20	1	ug/Kg	11/12/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	29	20	1	ug/Kg	11/12/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	37	20	1	ug/Kg	11/12/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	43	20	1	ug/Kg	11/12/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	11/10/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	42	1	ug/Kg	11/10/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Aniline	EPA-8270	U	72	1	ug/Kg	11/10/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	150	1	ug/Kg	11/10/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
3&4-Methylphenol	EPA-8270	170	100	1	ug/Kg	11/10/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	150	1	ug/Kg	11/10/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Isophorone	EPA-8270	U	110	1	ug/Kg	11/10/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Benzoic Acid	EPA-8270	U	1100	1	ug/Kg	11/10/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	380	1	ug/Kg	11/10/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	110	1	ug/Kg	11/10/2014	GAP
Naphthalene	EPA-8270	100	100	1	ug/Kg	11/10/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	11/10/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	290	1	ug/Kg	11/10/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-01
CLIENT SAMPLE ID	GP-26 (7.5-8.5)-10292014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/29/2014 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	11/10/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	11/10/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	62	1	ug/Kg	11/10/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	58	1	ug/Kg	11/10/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	11/10/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	34	1	ug/Kg	11/10/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	270	1	ug/Kg	11/10/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-01
CLIENT SAMPLE ID	GP-26 (7.5-8.5)-10292014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/29/2014 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
PCB-1016	EPA-8082	U	0.016	1	MG/KG	11/20/2014	CAS
PCB-1221	EPA-8082	U	0.032	1	MG/KG	11/20/2014	CAS
PCB-1232	EPA-8082	U	0.016	1	MG/KG	11/20/2014	CAS
PCB-1242	EPA-8082	U	0.016	1	MG/KG	11/20/2014	CAS
PCB-1248	EPA-8082	U	0.016	1	MG/KG	11/20/2014	CAS
PCB-1254	EPA-8082	U	0.016	1	MG/KG	11/20/2014	CAS
PCB-1260	EPA-8082	U	0.016	1	MG/KG	11/20/2014	CAS
A-BHC	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
G-BHC	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
B-BHC	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
Heptachlor	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
D-BHC	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
Aldrin	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
Chlordane	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
Endosulfan I	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
4,4'-DDE	EPA-8081	0.0059	0.0040	1	MG/KG	11/13/2014	CAS
Dieldrin	EPA-8081	U	0.0058	1	MG/KG	11/13/2014	CAS
Endrin	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
4,4'-DDD	EPA-8081	0.045	0.0040	1	MG/KG	11/13/2014	CAS
Endosulfan II	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
4,4'-DDT	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
Endosulfan Sulfate	EPA-8081	0.0053	0.0040	1	MG/KG	11/13/2014	CAS
Methoxychlor	EPA-8081	U	0.0040	1	MG/KG	11/13/2014	CAS
Toxaphene	EPA-8081	U	0.20	1	MG/KG	11/13/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	11/07/2014	RAL
pH	EPA-9045	6.29	± 0.01	1	S.U.	10/31/2014	SMR
Fluoride	EPA-300.0M	U	1.0	1	MG/KG	11/13/2014	GAP
Nitrate as N	EPA-300.0M	U	4.0	1	MG/KG	11/13/2014	GAP
Nitrite as N	EPA-300.0M	U	4.0	1	MG/KG	11/13/2014	GAP
Mercury	EPA-7471	0.12	0.020	1	MG/KG	11/03/2014	RAL
Arsenic	EPA-6020	2.3	1.2	5	MG/KG	11/04/2014	RAL
Barium	EPA-6020	170	0.50	5	MG/KG	11/04/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	11/04/2014	RAL
Chromium	EPA-6020	24	0.61	5	MG/KG	11/04/2014	RAL
Iron	EPA-6020	30000	55	5	MG/KG	11/04/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-01
CLIENT SAMPLE ID	GP-26 (7.5-8.5)-10292014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/29/2014 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	17	0.50	5	MG/KG	11/04/2014	RAL
Manganese	EPA-6020	340	0.50	5	MG/KG	11/04/2014	RAL
Selenium	EPA-6020	U	5.3	5	MG/KG	11/04/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	11/04/2014	RAL
Sodium	EPA-6020	610	50	5	MG/KG	11/04/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	92.4	11/12/2014	EBS
C25	NWTPH-HCID	105	11/12/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	114	11/01/2014	DLC
1,2-Dichloroethane-d4	EPA-8260	103	11/03/2014	DLC
Toluene-d8	EPA-8260	99.4	11/01/2014	DLC
Toluene-d8	EPA-8260	96.8	11/03/2014	DLC
4-Bromofluorobenzene	EPA-8260	106	11/01/2014	DLC
4-Bromofluorobenzene	EPA-8260	100	11/03/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	119	11/12/2014	GAP
Terphenyl-d14	EPA-8270 SIM	97.5	11/12/2014	GAP
2-Fluorophenol	EPA-8270	82.3	11/10/2014	GAP
Phenol-d5	EPA-8270	83.8	11/10/2014	GAP
Nitrobenzene-d5	EPA-8270	78.0	11/10/2014	GAP
2-Fluorobiphenyl	EPA-8270	90.5	11/10/2014	GAP
2,4,6-Tribromophenol	EPA-8270	105	11/10/2014	GAP
Terphenyl-d14	EPA-8270	83.9	11/10/2014	GAP
DCB	EPA-8082	66.0	11/20/2014	CAS
TCMX	EPA-8081	62.0	11/13/2014	CAS
DCB	EPA-8081	66.0	11/13/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-02
CLIENT SAMPLE ID	GP-24 (12.5-13.0)-10302014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/30/2014 12:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	11/12/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	11/12/2014	EBS
HCID-Oil Range	NWTPH-HCID	>100	100	1	MG/KG	11/12/2014	EBS
TPH-Diesel Range	NWTPH-DX	160	25	1	MG/KG	11/12/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	140	25	1	MG/KG	11/12/2014	EBS
TPH-Oil Range	NWTPH-DX	300	50	1	MG/KG	11/12/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	280	50	1	MG/KG	11/12/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Vinyl Chloride	EPA-8260	U	0.040	1	ug/Kg	11/01/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Acetone	EPA-8260	U	130	1	ug/Kg	11/03/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	11/01/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	11/01/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Bromodichloromethane	EPA-8260	U	0.96	1	ug/Kg	11/01/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-02
CLIENT SAMPLE ID	GP-24 (12.5-13.0)-10302014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/30/2014 12:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	1.0	1	ug/Kg	11/01/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	11/01/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	11/01/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	1.1	1	ug/Kg	11/01/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	1.1	1	ug/Kg	11/01/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-02
CLIENT SAMPLE ID	GP-24 (12.5-13.0)-10302014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/30/2014 12:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	67	1	ug/Kg	11/12/2014	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	11/10/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	34	1	ug/Kg	11/10/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Aniline	EPA-8270	U	59	1	ug/Kg	11/10/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	120	1	ug/Kg	11/10/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	120	1	ug/Kg	11/10/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	11/10/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	310	1	ug/Kg	11/10/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-02
CLIENT SAMPLE ID	GP-24 (12.5-13.0)-10302014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/30/2014 12:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	11/10/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	11/10/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	11/10/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	50	1	ug/Kg	11/10/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	47	1	ug/Kg	11/10/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	11/10/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	27	1	ug/Kg	11/10/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-02
CLIENT SAMPLE ID	GP-24 (12.5-13.0)-10302014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/30/2014 12:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
3,3-Dichlorobenzidine	EPA-8270	U	220	1	ug/Kg	11/10/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
PCB-1016	EPA-8082	U	0.013	1	MG/KG	11/20/2014	CAS
PCB-1221	EPA-8082	U	0.025	1	MG/KG	11/20/2014	CAS
PCB-1232	EPA-8082	U	0.013	1	MG/KG	11/20/2014	CAS
PCB-1242	EPA-8082	U	0.013	1	MG/KG	11/20/2014	CAS
PCB-1248	EPA-8082	U	0.013	1	MG/KG	11/20/2014	CAS
PCB-1254	EPA-8082	U	0.013	1	MG/KG	11/20/2014	CAS
PCB-1260	EPA-8082	U	0.013	1	MG/KG	11/20/2014	CAS
A-BHC	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
G-BHC	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
B-BHC	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Heptachlor	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
D-BHC	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Aldrin	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Chlordane	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Endosulfan I	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
4,4'-DDE	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Dieldrin	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Endrin	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
4,4'-DDD	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Endosulfan II	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
4,4'-DDT	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Methoxychlor	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Toxaphene	EPA-8081	U	0.16	1	MG/KG	11/13/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	11/07/2014	RAL
pH	EPA-9045	6.07	± 0.01	1	S.U.	10/31/2014	SMR
Fluoride	EPA-300.0M	2.2	1.0	1	MG/KG	11/13/2014	GAP
Nitrate as N	EPA-300.0M	U	4.0	1	MG/KG	11/13/2014	GAP
Nitrite as N	EPA-300.0M	U	4.0	1	MG/KG	11/13/2014	GAP
Mercury	EPA-7471	0.077	0.020	1	MG/KG	11/03/2014	RAL
Arsenic	EPA-6020	2.0	1.0	5	MG/KG	11/04/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-02
CLIENT SAMPLE ID	GP-24 (12.5-13.0)-10302014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/30/2014 12:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Barium	EPA-6020	140	0.50	5	MG/KG	11/04/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	11/04/2014	RAL
Chromium	EPA-6020	17	0.50	5	MG/KG	11/04/2014	RAL
Iron	EPA-6020	25000	50	5	MG/KG	11/04/2014	RAL
Lead	EPA-6020	9.1	0.50	5	MG/KG	11/04/2014	RAL
Manganese	EPA-6020	280	0.50	5	MG/KG	11/04/2014	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	11/04/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	11/04/2014	RAL
Sodium	EPA-6020	530	50	5	MG/KG	11/04/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	91.2	11/12/2014	EBS
C25	NWTPH-HCID	99.9	11/12/2014	EBS
C25	NWTPH-DX	114	11/12/2014	EBS
C25	NWTPH-DX w/ SGA	105	11/12/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	103	11/01/2014	DLC
1,2-Dichloroethane-d4	EPA-8260	102	11/03/2014	DLC
Toluene-d8	EPA-8260	101	11/01/2014	DLC
Toluene-d8	EPA-8260	97.3	11/03/2014	DLC
4-Bromofluorobenzene	EPA-8260	104	11/01/2014	DLC
4-Bromofluorobenzene	EPA-8260	96.0	11/03/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	36.2	11/12/2014	GAP
Terphenyl-d14	EPA-8270 SIM	30.6	11/12/2014	GAP
2-Fluorophenol	EPA-8270	76.7	11/10/2014	GAP
Phenol-d5	EPA-8270	78.4	11/10/2014	GAP
Nitrobenzene-d5	EPA-8270	74.8	11/10/2014	GAP
2-Fluorobiphenyl	EPA-8270	84.4	11/10/2014	GAP
2,4,6-Tribromophenol	EPA-8270	96.5	11/10/2014	GAP
Terphenyl-d14	EPA-8270	79.9	11/10/2014	GAP
DCB	EPA-8082	84.0	11/20/2014	CAS
TCMX	EPA-8081	51.0	11/13/2014	CAS
DCB	EPA-8081	60.0	11/13/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-03
CLIENT SAMPLE ID	GP-23 (15.0-15.5)-10302014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/30/2014 5:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	11/12/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	11/12/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	11/12/2014	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Vinyl Chloride	EPA-8260	U	0.053	1	ug/Kg	11/01/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	11/01/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Benzene	EPA-8260	U	5.0	1	ug/Kg	11/01/2014	DLC
Trichloroethene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Dibromomethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Bromodichloromethane	EPA-8260	U	1.3	1	ug/Kg	11/01/2014	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
Toluene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1,2-Trichloroethane	EPA-8260	U	1.4	1	ug/Kg	11/01/2014	DLC
2-Hexanone	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-03
CLIENT SAMPLE ID	GP-23 (15.0-15.5)-10302014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/30/2014 5:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Tetrachloroethylene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Dibromochloromethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	ug/Kg	11/01/2014	DLC
Chlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Ethylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
m,p-Xylene	EPA-8260	U	20	1	ug/Kg	11/01/2014	DLC
Styrene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
o-Xylene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Bromoform	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Isopropylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	1.4	1	ug/Kg	11/01/2014	DLC
1,2,3-Trichloropropane	EPA-8260	U	1.5	1	ug/Kg	11/01/2014	DLC
Bromobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
N-Propyl Benzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
2-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
4-Chlorotoluene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
T-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
S-Butyl Benzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,3 Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
N-Butylbenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	ug/Kg	11/01/2014	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	11/01/2014	DLC
Naphthalene	EPA-8270 SIM	250	20	1	ug/Kg	11/12/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	32	20	1	ug/Kg	11/12/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	22	20	1	ug/Kg	11/12/2014	GAP
Acenaphthylene	EPA-8270 SIM	81	20	1	ug/Kg	11/12/2014	GAP
Acenaphthene	EPA-8270 SIM	22	20	1	ug/Kg	11/12/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	110	1	ug/Kg	11/12/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-03
CLIENT SAMPLE ID	GP-23 (15.0-15.5)-10302014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/30/2014 5:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	170	20	1	ug/Kg	11/12/2014	GAP
Anthracene	EPA-8270 SIM	28	20	1	ug/Kg	11/12/2014	GAP
Fluoranthene	EPA-8270 SIM	250	20	1	ug/Kg	11/12/2014	GAP
Pyrene	EPA-8270 SIM	170	20	1	ug/Kg	11/12/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	44	20	1	ug/Kg	11/12/2014	GAP
Chrysene	EPA-8270 SIM	45	20	1	ug/Kg	11/12/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	88	20	1	ug/Kg	11/12/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	35	20	1	ug/Kg	11/12/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	27	20	1	ug/Kg	11/12/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	58	20	1	ug/Kg	11/12/2014	GAP
Pyridine	EPA-8270	U	200	1	ug/Kg	11/10/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	56	1	ug/Kg	11/10/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Aniline	EPA-8270	U	96	1	ug/Kg	11/10/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	200	1	ug/Kg	11/10/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Benzyl Alcohol	EPA-8270	U	110	1	ug/Kg	11/10/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	260	1	ug/Kg	11/10/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	190	1	ug/Kg	11/10/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Isophorone	EPA-8270	U	150	1	ug/Kg	11/10/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	130	1	ug/Kg	11/10/2014	GAP
Benzoic Acid	EPA-8270	U	1500	1	ug/Kg	11/10/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	510	1	ug/Kg	11/10/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	150	1	ug/Kg	11/10/2014	GAP
Naphthalene	EPA-8270	170	100	1	ug/Kg	11/10/2014	GAP
4-Chloroaniline	EPA-8270	U	1200	1	ug/Kg	11/10/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	380	1	ug/Kg	11/10/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-03
CLIENT SAMPLE ID	GP-23 (15.0-15.5)-10302014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/30/2014 5:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	11/10/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	670	1	ug/Kg	11/10/2014	GAP
2-Methylnaphthalene	EPA-8270	U	320	1	ug/Kg	11/10/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	82	1	ug/Kg	11/10/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	77	1	ug/Kg	11/10/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
3-Nitroaniline	EPA-8270	U	1200	1	ug/Kg	11/10/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	110	1	ug/Kg	11/10/2014	GAP
4-Nitrophenol	EPA-8270	U	110	1	ug/Kg	11/10/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	45	1	ug/Kg	11/10/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Nitroaniline	EPA-8270	U	260	1	ug/Kg	11/10/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	360	1	ug/Kg	11/10/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-03
CLIENT SAMPLE ID	GP-23 (15.0-15.5)-10302014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/30/2014 5:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
PCB-1016	EPA-8082	U	0.018	1	MG/KG	11/20/2014	CAS
PCB-1221	EPA-8082	U	0.036	1	MG/KG	11/20/2014	CAS
PCB-1232	EPA-8082	U	0.018	1	MG/KG	11/20/2014	CAS
PCB-1242	EPA-8082	U	0.018	1	MG/KG	11/20/2014	CAS
PCB-1248	EPA-8082	U	0.018	1	MG/KG	11/20/2014	CAS
PCB-1254	EPA-8082	U	0.018	1	MG/KG	11/20/2014	CAS
PCB-1260	EPA-8082	U	0.018	1	MG/KG	11/20/2014	CAS
A-BHC	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
G-BHC	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
B-BHC	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
Heptachlor	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
D-BHC	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
Aldrin	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
Heptachlor Epoxide	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
Chlordane	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
Endosulfan I	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
4,4'-DDE	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
Dieldrin	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
Endrin	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
4,4'-DDD	EPA-8081	0.0060	0.0045	1	MG/KG	11/13/2014	CAS
Endosulfan II	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
4,4'-DDT	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
Methoxychlor	EPA-8081	U	0.0045	1	MG/KG	11/13/2014	CAS
Toxaphene	EPA-8081	U	0.23	1	MG/KG	11/13/2014	CAS
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	11/07/2014	RAL
pH	EPA-9045	6.95	± 0.01	1	S.U.	10/31/2014	SMR
Fluoride	EPA-300.0M	3.7	1.0	1	MG/KG	11/13/2014	GAP
Nitrate as N	EPA-300.0M	U	4.0	1	MG/KG	11/13/2014	GAP
Nitrite as N	EPA-300.0M	U	4.0	1	MG/KG	11/13/2014	GAP
Mercury	EPA-7471	0.13	0.020	1	MG/KG	11/03/2014	RAL
Arsenic	EPA-6020	2.3	1.3	5	MG/KG	11/04/2014	RAL
Barium	EPA-6020	110	0.50	5	MG/KG	11/04/2014	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	11/04/2014	RAL
Chromium	EPA-6020	17	0.64	5	MG/KG	11/04/2014	RAL
Iron	EPA-6020	24000	58	5	MG/KG	11/04/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	ALS SAMPLE#:	EV14100222-03
CLIENT SAMPLE ID	GP-23 (15.0-15.5)-10302014	DATE RECEIVED:	10/31/2014
		COLLECTION DATE:	10/30/2014 5:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	23	0.50	5	MG/KG	11/04/2014	RAL
Manganese	EPA-6020	240	0.50	5	MG/KG	11/04/2014	RAL
Selenium	EPA-6020	U	5.6	5	MG/KG	11/04/2014	RAL
Silver	EPA-6020	U	0.50	5	MG/KG	11/04/2014	RAL
Sodium	EPA-6020	570	50	5	MG/KG	11/04/2014	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	90.2	11/12/2014	EBS
C25	NWTPH-HCID	92.4	11/12/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	119	11/01/2014	DLC
Toluene-d8	EPA-8260	105	11/01/2014	DLC
4-Bromofluorobenzene	EPA-8260	115	11/01/2014	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	107	11/12/2014	GAP
Terphenyl-d14	EPA-8270 SIM	86.7	11/12/2014	GAP
2-Fluorophenol	EPA-8270	72.8	11/10/2014	GAP
Phenol-d5	EPA-8270	72.7	11/10/2014	GAP
Nitrobenzene-d5	EPA-8270	68.3	11/10/2014	GAP
2-Fluorobiphenyl	EPA-8270	76.7	11/10/2014	GAP
2,4,6-Tribromophenol	EPA-8270	87.4	11/10/2014	GAP
Terphenyl-d14	EPA-8270	73.1	11/10/2014	GAP
DCB	EPA-8082	77.0	11/20/2014	CAS
TCMX	EPA-8081	56.0	11/13/2014	CAS
DCB	EPA-8081	63.0	11/13/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 12/1/2014
 130 - 2nd Ave. S. ALS SDG#: EV14100222
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed Former Landfill / #1148008

LABORATORY BLANK RESULTS

MB-111014S - Batch 87880 - Soil by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	11/10/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	11/10/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	11/10/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-111014S - Batch 87851 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	11/10/2014	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	11/10/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-103114S - Batch 87567 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
Chloromethane	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
Vinyl Chloride	EPA-8260	U	0.029	1	ug/Kg	10/31/2014	DLC
Bromomethane	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
Chloroethane	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
Carbon Disulfide	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
Acetone	EPA-8260	U	50	1	ug/Kg	10/31/2014	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
Methylene Chloride	EPA-8260	U	20	1	ug/Kg	10/31/2014	DLC
Acrylonitrile	EPA-8260	U	50	1	ug/Kg	10/31/2014	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
2-Butanone	EPA-8260	U	50	1	ug/Kg	10/31/2014	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
Bromochloromethane	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
Chloroform	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 12/1/2014
130 - 2nd Ave. S. ALS SDG#: EV14100222
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Closed Former Landfill / #1148008

LABORATORY BLANK RESULTS

MB-103114S - Batch 87567 - Soil by EPA-8260

Table with 8 columns: Compound Name, EPA Method, Unit, Concentration, Multiplier, Units/Kg, Date, and Detection Limit. Lists various chemicals like Benzene, Trichloroethene, etc.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-103114S - Batch 87567 - Soil by EPA-8260

Hexachlorobutadiene	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
Naphthalene	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	ug/Kg	10/31/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-111114S - Batch 87975 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Fluorene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Pentachlorophenol	EPA-8270 SIM	U	77	1	ug/Kg	11/12/2014	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Chrysene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	ug/Kg	11/12/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-110514S - Batch 87978 - Soil by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	200	1	ug/Kg	11/10/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	33	1	ug/Kg	11/10/2014	GAP
Phenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Aniline	EPA-8270	U	58	1	ug/Kg	11/10/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	120	1	ug/Kg	11/10/2014	GAP
2-Chlorophenol	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-110514S - Batch 87978 - Soil by EPA-8270

Benzyl Alcohol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Methylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
3&4-Methylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	120	1	ug/Kg	11/10/2014	GAP
Hexachloroethane	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Nitrobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Isophorone	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Nitrophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Benzoic Acid	EPA-8270	U	1000	1	ug/Kg	11/10/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	310	1	ug/Kg	11/10/2014	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Naphthalene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Chloroaniline	EPA-8270	U	1000	1	ug/Kg	11/10/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
Hexachlorobutadiene	EPA-8270	U	500	1	ug/Kg	11/10/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	ug/Kg	11/10/2014	GAP
2-Methylnaphthalene	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	49	1	ug/Kg	11/10/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2-Nitroaniline	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Acenaphthylene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Dimethylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	46	1	ug/Kg	11/10/2014	GAP
Acenaphthene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
3-Nitroaniline	EPA-8270	U	1000	1	ug/Kg	11/10/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Nitrophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Dibenzofuran	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	27	1	ug/Kg	11/10/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Diethylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Fluorene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Nitroaniline	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 12/1/2014
 130 - 2nd Ave. S. ALS SDG#: EV14100222
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed Former Landfill / #1148008

LABORATORY BLANK RESULTS

MB-110514S - Batch 87978 - Soil by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Azobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Hexachlorobenzene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Phenanthrene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Anthracene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Carbazole	EPA-8270	U	250	1	ug/Kg	11/10/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Fluoranthene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Pyrene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	210	1	ug/Kg	11/10/2014	GAP
Chrysene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP
Benzo[G,H,I]Perylene	EPA-8270	U	100	1	ug/Kg	11/10/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-11/20/2014 - Batch R245858 - Soil by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.013	1	MG/KG	11/20/2014	CAS
PCB-1221	EPA-8082	U	0.025	1	MG/KG	11/20/2014	CAS
PCB-1232	EPA-8082	U	0.013	1	MG/KG	11/20/2014	CAS
PCB-1242	EPA-8082	U	0.013	1	MG/KG	11/20/2014	CAS
PCB-1248	EPA-8082	U	0.013	1	MG/KG	11/20/2014	CAS
PCB-1254	EPA-8082	U	0.013	1	MG/KG	11/20/2014	CAS
PCB-1260	EPA-8082	U	0.013	1	MG/KG	11/20/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-11/13/2014 - Batch R245857 - Soil by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
G-BHC	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
B-BHC	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Heptachlor	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
D-BHC	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Aldrin	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 12/1/2014
 130 - 2nd Ave. S. ALS SDG#: EV14100222
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed Former Landfill / #1148008

LABORATORY BLANK RESULTS

MB1-11/13/2014 - Batch R245857 - Soil by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Chlordane	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Endosulfan I	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
4,4'-DDE	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Dieldrin	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Endrin	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
4,4'-DDD	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Endosulfan II	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
4,4'-DDT	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Endrin Aldehyde	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Endosulfan Sulfate	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Methoxychlor	EPA-8081	U	0.0032	1	MG/KG	11/13/2014	CAS
Toxaphene	EPA-8081	U	0.16	1	MG/KG	11/13/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-244532A - Batch R244532A - Soil by EPA-7196

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	11/07/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-11132014 - Batch R245234 - Soil by EPA-300.0M

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoride	EPA-300.0M	U	1.0	1	MG/KG	11/13/2014	GAP
Nitrate as N	EPA-300.0M	U	4.0	1	MG/KG	11/13/2014	GAP
Nitrite as N	EPA-300.0M	U	4.0	1	MG/KG	11/13/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-1132014 - Batch R244212 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	0.020	1	MG/KG	11/03/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-110314S - Batch 87571 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	0.20	1	MG/KG	11/04/2014	RAL
Barium	EPA-6020	U	0.10	1	MG/KG	11/04/2014	RAL

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
		ALS SDG#:	EV14100222
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Jeffrey Fellows		
CLIENT PROJECT:	Closed Former Landfill / #1148008		

LABORATORY BLANK RESULTS

MB-110314S - Batch 87571 - Soil by EPA-6020

Cadmium	EPA-6020	U	0.10	1	MG/KG	11/04/2014	RAL
Chromium	EPA-6020	U	0.10	1	MG/KG	11/04/2014	RAL
Iron	EPA-6020	U	10	1	MG/KG	11/04/2014	RAL
Lead	EPA-6020	U	0.10	1	MG/KG	11/04/2014	RAL
Manganese	EPA-6020	U	0.10	1	MG/KG	11/04/2014	RAL
Selenium	EPA-6020	U	1.0	1	MG/KG	11/04/2014	RAL
Silver	EPA-6020	U	0.10	1	MG/KG	11/04/2014	RAL
Sodium	EPA-6020	U	10	1	MG/KG	11/04/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 87851 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	98.0			11/10/2014	EBS
TPH-Diesel Range - BSD	NWTPH-DX	107	9		11/10/2014	EBS

ALS Test Batch ID: 87567 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	99.9			10/31/2014	DLC
1,1-Dichloroethene - BSD	EPA-8260	104	4		10/31/2014	DLC
Benzene - BS	EPA-8260	97.0			10/31/2014	DLC
Benzene - BSD	EPA-8260	96.3	1		10/31/2014	DLC
Trichloroethene - BS	EPA-8260	103			10/31/2014	DLC
Trichloroethene - BSD	EPA-8260	102	1		10/31/2014	DLC
Toluene - BS	EPA-8260	95.6			10/31/2014	DLC
Toluene - BSD	EPA-8260	96.5	1		10/31/2014	DLC
Chlorobenzene - BS	EPA-8260	94.9			10/31/2014	DLC
Chlorobenzene - BSD	EPA-8260	96.0	1		10/31/2014	DLC

ALS Test Batch ID: 87975 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	EPA-8270 SIM	81.3			11/12/2014	GAP
Naphthalene - BSD	EPA-8270 SIM	84.9	4		11/12/2014	GAP
Acenaphthene - BS	EPA-8270 SIM	92.4			11/12/2014	GAP
Acenaphthene - BSD	EPA-8270 SIM	97.7	6		11/12/2014	GAP
Pentachlorophenol - BS	EPA-8270 SIM	106			11/12/2014	GAP
Pentachlorophenol - BSD	EPA-8270 SIM	101	5		11/12/2014	GAP
Pyrene - BS	EPA-8270 SIM	101			11/12/2014	GAP
Pyrene - BSD	EPA-8270 SIM	110	9		11/12/2014	GAP
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	85.4			11/12/2014	GAP
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	90.8	6		11/12/2014	GAP

ALS Test Batch ID: 87978 - Soil by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	82.7			11/10/2014	GAP
Phenol - BSD	EPA-8270	86.0	4		11/10/2014	GAP
2-Chlorophenol - BS	EPA-8270	83.2			11/10/2014	GAP
2-Chlorophenol - BSD	EPA-8270	86.9	4		11/10/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,4-Dichlorobenzene - BS	EPA-8270	74.8			11/10/2014	GAP
1,4-Dichlorobenzene - BSD	EPA-8270	83.2	11		11/10/2014	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	67.5			11/10/2014	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	68.2	1		11/10/2014	GAP
1,2,4-Trichlorobenzene - BS	EPA-8270	76.5			11/10/2014	GAP
1,2,4-Trichlorobenzene - BSD	EPA-8270	85.6	11		11/10/2014	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	84.8			11/10/2014	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	85.6	1		11/10/2014	GAP
Acenaphthene - BS	EPA-8270	82.7			11/10/2014	GAP
Acenaphthene - BSD	EPA-8270	92.1	11		11/10/2014	GAP
4-Nitrophenol - BS	EPA-8270	93.8			11/10/2014	GAP
4-Nitrophenol - BSD	EPA-8270	92.2	2		11/10/2014	GAP
2,4-Dinitrotoluene - BS	EPA-8270	68.4			11/10/2014	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	71.6	5		11/10/2014	GAP
Pyrene - BS	EPA-8270	81.6			11/10/2014	GAP
Pyrene - BSD	EPA-8270	90.9	11		11/10/2014	GAP

ALS Test Batch ID: R245858 - Soil by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	108			11/20/2014	CAS
PCB-1260 - BS	EPA-8082	85.5			11/20/2014	CAS

ALS Test Batch ID: R245857 - Soil by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	66.1			11/13/2014	CAS
A-BHC - BSD	EPA-8081	70.4	6		11/13/2014	CAS
G-BHC - BS	EPA-8081	66.3			11/13/2014	CAS
G-BHC - BSD	EPA-8081	70.2	6		11/13/2014	CAS
B-BHC - BS	EPA-8081	63.6			11/13/2014	CAS
B-BHC - BSD	EPA-8081	66.0	4		11/13/2014	CAS
Heptachlor - BS	EPA-8081	66.9			11/13/2014	CAS
Heptachlor - BSD	EPA-8081	71.3	6		11/13/2014	CAS
D-BHC - BS	EPA-8081	71.3			11/13/2014	CAS
D-BHC - BSD	EPA-8081	74.1	4		11/13/2014	CAS
Aldrin - BS	EPA-8081	59.5			11/13/2014	CAS
Aldrin - BSD	EPA-8081	64.4	8		11/13/2014	CAS
Heptachlor Epoxide - BS	EPA-8081	65.9			11/13/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 12/1/2014
 130 - 2nd Ave. S. ALS SDG#: EV14100222
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed Former Landfill / #1148008

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide - BSD	EPA-8081	68.4	4		11/13/2014	CAS
Chlordane - BS	EPA-8081	64.6			11/13/2014	CAS
Chlordane - BSD	EPA-8081	66.5	3		11/13/2014	CAS
Endosulfan I - BS	EPA-8081	38.1			11/13/2014	CAS
Endosulfan I - BSD	EPA-8081	39.8	4		11/13/2014	CAS
4,4'-DDE - BS	EPA-8081	67.6			11/13/2014	CAS
4,4'-DDE - BSD	EPA-8081	68.8	2		11/13/2014	CAS
Dieldrin - BS	EPA-8081	67.2			11/13/2014	CAS
Dieldrin - BSD	EPA-8081	69.0	3		11/13/2014	CAS
Endrin - BS	EPA-8081	68.7			11/13/2014	CAS
Endrin - BSD	EPA-8081	70.0	2		11/13/2014	CAS
4,4'-DDD - BS	EPA-8081	73.0			11/13/2014	CAS
4,4'-DDD - BSD	EPA-8081	72.9	0		11/13/2014	CAS
Endosulfan II - BS	EPA-8081	48.0			11/13/2014	CAS
Endosulfan II - BSD	EPA-8081	48.1	0		11/13/2014	CAS
4,4'-DDT - BS	EPA-8081	76.7			11/13/2014	CAS
4,4'-DDT - BSD	EPA-8081	76.3	1		11/13/2014	CAS
Endrin Aldehyde - BS	EPA-8081	74.1			11/13/2014	CAS
Endrin Aldehyde - BSD	EPA-8081	76.3	3		11/13/2014	CAS
Endosulfan Sulfate - BS	EPA-8081	75.0			11/13/2014	CAS
Endosulfan Sulfate - BSD	EPA-8081	74.9	0		11/13/2014	CAS
Methoxychlor - BS	EPA-8081	82.6			11/13/2014	CAS
Methoxychlor - BSD	EPA-8081	81.9	1		11/13/2014	CAS
Toxaphene - BS	EPA-8081	69.4			11/13/2014	CAS
Toxaphene - BSD	EPA-8081	75.4	8		11/13/2014	CAS

ALS Test Batch ID: R244532A - Soil by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (VI) - BS	EPA-7196	105			11/07/2014	RAL
Chromium (VI) - BSD	EPA-7196	105	0		11/07/2014	RAL

ALS Test Batch ID: R245234 - Soil by EPA-300.0M

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Fluoride - BS	EPA-300.0M	102			11/13/2014	GAP
Fluoride - BSD	EPA-300.0M	103	1		11/13/2014	GAP
Nitrate as N - BS	EPA-300.0M	108			11/13/2014	GAP
Nitrate as N - BSD	EPA-300.0M	109	1		11/13/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/1/2014
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Nitrite as N - BS	EPA-300.0M	95.0			11/13/2014	GAP
Nitrite as N - BSD	EPA-300.0M	96.0	1		11/13/2014	GAP

ALS Test Batch ID: R244212 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7471	105			11/03/2014	RAL
Mercury - BSD	EPA-7471	97.0	8		11/03/2014	RAL

ALS Test Batch ID: 87571 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-6020	104			11/04/2014	RAL
Arsenic - BSD	EPA-6020	100	4		11/04/2014	RAL
Barium - BS	EPA-6020	108			11/04/2014	RAL
Barium - BSD	EPA-6020	106	2		11/04/2014	RAL
Cadmium - BS	EPA-6020	105			11/04/2014	RAL
Cadmium - BSD	EPA-6020	104	2		11/04/2014	RAL
Chromium - BS	EPA-6020	106			11/04/2014	RAL
Chromium - BSD	EPA-6020	105	1		11/04/2014	RAL
Iron - BS	EPA-6020	108			11/04/2014	RAL
Iron - BSD	EPA-6020	106	1		11/04/2014	RAL
Lead - BS	EPA-6020	108			11/04/2014	RAL
Lead - BSD	EPA-6020	107	1		11/04/2014	RAL
Manganese - BS	EPA-6020	107			11/04/2014	RAL
Manganese - BSD	EPA-6020	106	1		11/04/2014	RAL
Selenium - BS	EPA-6020	105			11/04/2014	RAL
Selenium - BSD	EPA-6020	101	5		11/04/2014	RAL
Silver - BS	EPA-6020	111			11/04/2014	RAL
Silver - BSD	EPA-6020	110	1		11/04/2014	RAL
Sodium - BS	EPA-6020	105			11/04/2014	RAL
Sodium - BSD	EPA-6020	103	2		11/04/2014	RAL

APPROVED BY

Laboratory Director



EV14100222

Date 10/31/2014
Page 1 of 2

Chain-of-Custody Record

Project Name CLOSED FORMER LANDFILL Project No. 1148008
 Project Location/Event GAS PROBE INSTALLATION / YAKIMA, WA
 Sampler's Name MATT MURONEY / STEVE SHAW
 Project Contact JEFF FELLOWS
 Send Results To JEFF FELLOWS/MATT MURONEY/ANNE HANUSIN

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters										Observations/Comments	
					TPH-HID	TPH-G	TPH-R	STHS (EPA 8210-SM)	VOCs (EPA 8210-C)	SOLVENTS (EPA 8160)	CHLORINATED SOLVENTS (EPA 8151)	PCBs (EPA 8082)	Total Metals (EPA 8012)	Mercury (EPA 8032)		Fluoride (EPA 8210)
1 GP-26 (7.5-B6)-10242014	10/24/14	1730	SOIL	6	X	X	X	X	X	X	X	X	X	X	X	Allow water samples to settle, collect aliquot from clear portion X NWTPH-Dx - run acid wash/silica gel cleanup run samples standardized to _____ product Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): non-preserved _____ preserved w/methanol _____ preserved w/sodium bisulfate _____ Freeze upon receipt _____ Dissolved metal water samples field filtered _____ Other: <u>Hold pending HUP results</u> <u>Asenic, Barium, Cadmium, Cobalt, Chromium, Chromium III, Iron, Lead, Manganese, Selenium, Silver, Sodium Fluoride and nitrate/nitrite</u> <u>Add #2 for DX/cleanup and Method of shipment per Jeffrey.</u>
2 GP-24 (12.5-13.0)-10280014	10/30/14	1210	SOIL	6	X	X	X	X	X	X	X	X	X	X	X	
3 GP-23 (15.0-15.6)-10300014	10/30/14	1700	SOIL	6	X	X	X	X	X	X	X	X	X	X	X	

Special Shipment/Handling or Storage Requirements _____

Relinquished by	Received by
Signature <u>[Signature]</u> Printed Name <u>MATT MURONEY</u> Company <u>LANDAU ASSOCIATES</u> Date <u>10/31/14</u> Time <u>1240</u>	Signature <u>[Signature]</u> Printed Name <u>RICK BAY</u> Company <u>ALS</u> Date <u>10/31/14</u> Time <u>12:35</u>
Relinquished by	Received by
Signature _____ Printed Name _____ Company _____ Date _____ Time _____	Signature _____ Printed Name _____ Company _____ Date _____ Time _____

ALS ENVIRONMENTAL
Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV14100222

Project: Closed Former Landfill / # 1148008

Received Date: 10/31/14 Received Time: 12:40 By: SN

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals on outside of sample?	___	<input checked="" type="checkbox"/>	___
If yes, how many? _____			
Where? _____			
Custody seal date: _____			
Seal name: _____			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)? ___ ___

Did all bottles have labels? ___ ___

Did all bottle labels and tags agree with Chain of Custody? ___ ___

Were samples received within hold time? ___ ___

Did all bottles arrive in good condition (unbroken, etc.)? ___ ___

Was sufficient amount of sample sent for the tests indicated? ___ ___

Was correct preservation added to samples? ___ ___

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

*Received per 5035
low kits*

Were VOA vials checked for absence of air bubbles? ___ ___

Bubbles present in sample #: _____

Temperature of cooler upon receipt: 2.1° on ice Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? ___ Who was called? ___ By whom? ___ Date: ___

Outcome of call: _____



August 13, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On October 31st, 3 samples were received by our laboratory and assigned our laboratory project number EV14100222. The project was identified as your Closed Former Landfill / #1148008. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report is being re-issued with lowered reporting limits for Chloroform. No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/13/2015
130 - 2nd Ave. S. ALS JOB#: EV14100222
Edmonds, WA 98020 ALS SAMPLE#: EV14100222-01
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 10/31/2014
CLIENT PROJECT: Closed Former Landfill / #1148008 COLLECTION DATE: 10/29/2014 1:30:00 PM
CLIENT SAMPLE ID GP-26 (7.5-8.5)-10292014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	11/01/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/13/2015
130 - 2nd Ave. S. ALS JOB#: EV14100222
Edmonds, WA 98020 ALS SAMPLE#: EV14100222-02
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 10/31/2014
CLIENT PROJECT: Closed Former Landfill / #1148008 COLLECTION DATE: 10/30/2014 12:10:00 PM
CLIENT SAMPLE ID GP-24 (12.5-13.0)-10302014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	11/01/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/13/2015
130 - 2nd Ave. S. ALS JOB#: EV14100222
Edmonds, WA 98020 ALS SAMPLE#: EV14100222-03
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 10/31/2014
CLIENT PROJECT: Closed Former Landfill / #1148008 COLLECTION DATE: 10/30/2014 5:00:00 PM
CLIENT SAMPLE ID GP-23 (15.0-15.5)-10302014 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	11/01/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/13/2015
130 - 2nd Ave. S. ALS SDG#: EV14100222
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Closed Former Landfill / #1148008

LABORATORY BLANK RESULTS

MB-103114S - Batch 87567 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	QUAL	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U		UG/KG	8.0	10/31/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	8/13/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14100222
CLIENT PROJECT:	Closed Former Landfill / #1148008	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 87567 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	99.9			10/31/2014	DLC
1,1-Dichloroethene - BSD	EPA-8260	104	4		10/31/2014	DLC
Benzene - BS	EPA-8260	97.0			10/31/2014	DLC
Benzene - BSD	EPA-8260	96.3	1		10/31/2014	DLC
Toluene - BS	EPA-8260	95.6			10/31/2014	DLC
Toluene - BSD	EPA-8260	96.5	1		10/31/2014	DLC
Chlorobenzene - BS	EPA-8260	94.9			10/31/2014	DLC
Chlorobenzene - BSD	EPA-8260	96.0	1		10/31/2014	DLC

APPROVED BY



Laboratory Director



January 21, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On December 17th, 6 samples were received by our laboratory and assigned our laboratory project number EV14120119. The project was identified as your Yakima Landfill Qtrly GW Sampling / #1148008.020.023. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report has been revised and is being re-issued to include Hexachlorobenze results by EPA-8081. No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120119
CLIENT PROJECT:	Yakima Landfill Qtrly GW Sampling / #1148008.020.023	ALS SAMPLE#:	EV14120119-01
CLIENT SAMPLE ID	MW-105-121614	DATE RECEIVED:	12/17/2014
		COLLECTION DATE:	12/16/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	0.015	0.0052	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	01/03/2015	CAS
Total Dissolved Solids	SM2540C	220	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	17	0.46	5	MG/L	12/18/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	12/18/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/18/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/18/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/18/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	190	15	1	MG/L	12/22/2014	CAS
Bicarbonate as CaCO3	SM2320B	190	15	1	MG/L	12/22/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
130 - 2nd Ave. S. ALS JOB#: EV14120119
Edmonds, WA 98020 ALS SAMPLE#: EV14120119-01
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 12/17/2014
CLIENT PROJECT: Yakima Landfill Qtrly GW Sampling / COLLECTION DATE: 12/16/2014 10:30:00 AM
#1148008.020.023
CLIENT SAMPLE ID MW-105-121614 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8082	91.0	12/24/2014	CAS
TCMX	EPA-8081	56.0	01/03/2015	CAS
DCB	EPA-8081	74.0	01/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120119
CLIENT PROJECT:	Yakima Landfill Qtrly GW Sampling / #1148008.020.023	ALS SAMPLE#:	EV14120119-02
		DATE RECEIVED:	12/17/2014
CLIENT SAMPLE ID	MW-104-121614	COLLECTION DATE:	12/16/2014 12:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0052	1	ug/L	12/29/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	12/29/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	ug/L	12/29/2014	CAS
PCB-1242	EPA-8082	0.040	0.0052	1	ug/L	12/29/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	ug/L	12/29/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	ug/L	12/29/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	ug/L	12/29/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	01/03/2015	CAS
Total Dissolved Solids	SM2540C	250	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	18	0.092	1	MG/L	12/18/2014	GAP
Fluoride	EPA-300.0	0.26	0.16	1	MG/L	12/18/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/18/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/18/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/18/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	200	15	1	MG/L	12/22/2014	CAS
Bicarbonate as CaCO3	SM2320B	200	15	1	MG/L	12/22/2014	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120119
CLIENT PROJECT:	Yakima Landfill Qtrly GW Sampling / #1148008.020.023	ALS SAMPLE#:	EV14120119-02
CLIENT SAMPLE ID	MW-104-121614	DATE RECEIVED:	12/17/2014
		COLLECTION DATE:	12/16/2014 12:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8082	93.0	12/29/2014	CAS
TCMX	EPA-8081	58.0	01/03/2015	CAS
DCB	EPA-8081	74.0	01/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120119
CLIENT PROJECT:	Yakima Landfill Qtrly GW Sampling / #1148008.020.023	ALS SAMPLE#:	EV14120119-03
CLIENT SAMPLE ID	MW-108-121614	DATE RECEIVED:	12/17/2014
		COLLECTION DATE:	12/16/2014 12:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	01/03/2015	CAS
Total Dissolved Solids	SM2540C	300	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	18	0.092	1	MG/L	12/18/2014	GAP
Fluoride	EPA-300.0	0.25	0.16	1	MG/L	12/18/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/18/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/18/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/18/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	210	15	1	MG/L	12/22/2014	CAS
Bicarbonate as CaCO3	SM2320B	210	15	1	MG/L	12/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TCMX	EPA-8081	58.0	01/03/2015	CAS
DCB	EPA-8081	75.0	01/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120119
CLIENT PROJECT:	Yakima Landfill Qtrly GW Sampling / #1148008.020.023	ALS SAMPLE#:	EV14120119-04
		DATE RECEIVED:	12/17/2014
CLIENT SAMPLE ID	MW-7-121614	COLLECTION DATE:	12/16/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	0.040	0.0052	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	ug/L	01/03/2015	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	01/03/2015	CAS
Total Dissolved Solids	SM2540C	240	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	19	0.092	1	MG/L	12/18/2014	GAP
Fluoride	EPA-300.0	0.39	0.16	1	MG/L	12/18/2014	GAP
Nitrate as N	EPA-300.0	0.35	0.034	1	MG/L	12/18/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/18/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/18/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	220	15	1	MG/L	12/22/2014	CAS
Bicarbonate as CaCO3	SM2320B	220	15	1	MG/L	12/22/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
130 - 2nd Ave. S. ALS JOB#: EV14120119
Edmonds, WA 98020 ALS SAMPLE#: EV14120119-04
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 12/17/2014
CLIENT PROJECT: Yakima Landfill Qtrly GW Sampling / COLLECTION DATE: 12/16/2014 2:30:00 PM
#1148008.020.023
CLIENT SAMPLE ID MW-7-121614 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8082	90.0	12/24/2014	CAS
TCMX	EPA-8081	52.0	01/03/2015	CAS
DCB	EPA-8081	69.0	01/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120119
CLIENT PROJECT:	Yakima Landfill Qtrly GW Sampling / #1148008.020.023	ALS SAMPLE#:	EV14120119-05
CLIENT SAMPLE ID	MW-107-121614	DATE RECEIVED:	12/17/2014
		COLLECTION DATE:	12/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	0.018	0.0050	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/03/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/03/2015	CAS
Total Dissolved Solids	SM2540C	280	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	18	0.46	5	MG/L	12/18/2014	GAP
Fluoride	EPA-300.0	0.22	0.16	1	MG/L	12/18/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/18/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/18/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/18/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	200	15	1	MG/L	12/22/2014	CAS
Bicarbonate as CaCO3	SM2320B	200	15	1	MG/L	12/22/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
130 - 2nd Ave. S. ALS JOB#: EV14120119
Edmonds, WA 98020 ALS SAMPLE#: EV14120119-05
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 12/17/2014
CLIENT PROJECT: Yakima Landfill Qtrly GW Sampling / COLLECTION DATE: 12/16/2014 2:20:00 PM
#1148008.020.023
CLIENT SAMPLE ID MW-107-121614 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8082	86.0	12/24/2014	CAS
TCMX	EPA-8081	55.0	01/03/2015	CAS
DCB	EPA-8081	67.0	01/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
 130 - 2nd Ave. S.
 Edmonds, WA 98020

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill Qtrly GW Sampling /
 #1148008.020.023

DATE: 1/21/2015
 ALS SDG#: EV14120119
 WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB1-12/24/2014 - Batch R247772 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-01/06/2015 - Batch R247775 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120119
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill Qtrly GW Sampling /
 #1148008.020.023

LABORATORY BLANK RESULTS

MBLK-12222014 - Batch R247439 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	12/22/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12182014 - Batch R247471 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	12/18/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	12/18/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/18/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/18/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/18/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12222014 - Batch R247630 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	12/22/2014	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	12/22/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14120119
CLIENT PROJECT:	Yakima Landfill Qtrly GW Sampling / #1148008.020.023	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R247772 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	104			12/24/2014	CAS
PCB-1016 - BSD	EPA-8082	87.0	18		12/24/2014	CAS
PCB-1260 - BS	EPA-8082	124			12/24/2014	CAS
PCB-1260 - BSD	EPA-8082	110	13		12/24/2014	CAS

ALS Test Batch ID: R247775 - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	87.5			01/03/2015	CAS
A-BHC - BSD	EPA-8081	78.0	11		01/03/2015	CAS
G-BHC - BS	EPA-8081	87.5			01/03/2015	CAS
G-BHC - BSD	EPA-8081	78.5	11		01/03/2015	CAS
B-BHC - BS	EPA-8081	80.5			01/03/2015	CAS
B-BHC - BSD	EPA-8081	73.5	9		01/03/2015	CAS
Heptachlor - BS	EPA-8081	83.5			01/03/2015	CAS
Heptachlor - BSD	EPA-8081	73.0	13		01/03/2015	CAS
D-BHC - BS	EPA-8081	93.0			01/03/2015	CAS
D-BHC - BSD	EPA-8081	83.5	11		01/03/2015	CAS
Aldrin - BS	EPA-8081	76.5			01/03/2015	CAS
Aldrin - BSD	EPA-8081	67.0	13		01/03/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	83.5			01/03/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	74.5	11		01/03/2015	CAS
Chlordane - BS	EPA-8081	80.5			01/03/2015	CAS
Chlordane - BSD	EPA-8081	72.5	10		01/03/2015	CAS
Endosulfan I - BS	EPA-8081	77.5			01/03/2015	CAS
Endosulfan I - BSD	EPA-8081	68.5	12		01/03/2015	CAS
4,4'-DDE - BS	EPA-8081	82.5			01/03/2015	CAS
4,4'-DDE - BSD	EPA-8081	74.0	11		01/03/2015	CAS
Dieldrin - BS	EPA-8081	85.5			01/03/2015	CAS
Dieldrin - BSD	EPA-8081	77.0	10		01/03/2015	CAS
Endrin - BS	EPA-8081	89.5			01/03/2015	CAS
Endrin - BSD	EPA-8081	80.0	11		01/03/2015	CAS
4,4'-DDD - BS	EPA-8081	86.0			01/03/2015	CAS
4,4'-DDD - BSD	EPA-8081	77.0	11		01/03/2015	CAS
Endosulfan II - BS	EPA-8081	82.5			01/03/2015	CAS
Endosulfan II - BSD	EPA-8081	74.5	10		01/03/2015	CAS
4,4'-DDT - BS	EPA-8081	85.0			01/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV14120119
CLIENT PROJECT:	Yakima Landfill Qtrly GW Sampling / #1148008.020.023	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
4,4'-DDT - BSD	EPA-8081	76.5	11		01/03/2015	CAS
Endrin Aldehyde - BS	EPA-8081	88.0			01/03/2015	CAS
Endrin Aldehyde - BSD	EPA-8081	81.5	8		01/03/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	91.5			01/03/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	83.0	10		01/03/2015	CAS
Methoxychlor - BS	EPA-8081	91.5			01/03/2015	CAS
Methoxychlor - BSD	EPA-8081	82.5	10		01/03/2015	CAS
Hexachlorobenzene - BS	EPA-8081	67.5			01/03/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	60.0	12		01/03/2015	CAS
Toxaphene - BS	EPA-8081	101			01/06/2015	CAS
Toxaphene - BSD	EPA-8081	94.9	6		01/06/2015	CAS

ALS Test Batch ID: R247439 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	95.0			12/22/2014	DLC

ALS Test Batch ID: R247471 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	94.0			12/18/2014	GAP
Chloride - BSD	EPA-300.0	95.0	1		12/18/2014	GAP
Fluoride - BS	EPA-300.0	94.0			12/18/2014	GAP
Fluoride - BSD	EPA-300.0	93.0	1		12/18/2014	GAP
Nitrate as N - BS	EPA-300.0	109			12/18/2014	GAP
Nitrate as N - BSD	EPA-300.0	109	0		12/18/2014	GAP
Nitrite as N - BS	EPA-300.0	96.0			12/18/2014	GAP
Nitrite as N - BSD	EPA-300.0	93.0	3		12/18/2014	GAP
Sulfate - BS	EPA-300.0	102			12/18/2014	GAP
Sulfate - BSD	EPA-300.0	97.0	5		12/18/2014	GAP

ALS Test Batch ID: R247630 - Water by SM2320B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total - BS	SM2320B	108			12/22/2014	CAS

CERTIFICATE OF ANALYSIS

APPROVED BY



Laboratory Director

EV14/2019

Date 12/16/14

Page ___ of ___

Chain-of-Custody Record

Project Name Yakima Landfill
 Project Location/Event Quarterly Soil Sampling Project No. 1148008.020.230
 Sampler's Name Stephanie Renardo/Shane Kostka
 Project Contact Jeffrey Fellows
 Send Results To S. Fellows, A. Halvorsen

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters				Observations/Comments
					Conductivity/TDS	Alkalinity	Chloride	TCB'S	
1 MW-105-121614	12/16/14	1030	H ₂ O	3	X	X	X	X	Allow water samples to settle, collect aliquot from clear portion run samples standardized to _____ product Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt <input type="checkbox"/> Dissolved metal water samples field filtered Other: <u>Fluoride, Nitrate, Nitrite, Chloride, Sulfate</u> <u>12/17/14 - 3th broken for MW-108</u>
2 MW-104-121614	12/16/14	1200		3	X	X	X		
3 MW-108-121614	12/16/14	1221		3	X	X	X		
4 MW-7-121614	12/16/14	1430		3	X	X	X		
5 MW-107-121614	12/16/14	1480		3	X	X	X		
6 Trip Blanks				2					

Special Shipment/Handling or Storage Requirements

Method of Shipment FedEx

Relinquished by
 Signature [Signature]
 Printed Name Stephanie Renardo
 Company Landau Associates
 Date 12/16/14 Time 1530

Received by
 Signature [Signature]
 Printed Name Shawn Robinson
 Company ALS
 Date 12/17/14 Time 8:35

Relinquished by
 Signature _____
 Printed Name _____
 Company _____
 Date _____ Time _____

Received by
 Signature _____
 Printed Name _____
 Company _____
 Date _____ Time _____

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV14120119

Project: Yakima Landfill Qtrly GW Sampling / #1148008.020.230 ⁰²³

Received Date: 12/17/14 Received Time: 8:35 am By: SM

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express First Overnight

Were custody seals on outside of sample?

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If yes, how many? 1 Where? outside top of cooler
Custody seal date: 12/16/14 Seal name: Landau

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Did all bottles have labels?

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Did all bottle labels and tags agree with Chain of Custody?

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Were samples received within hold time?

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Did all bottles arrive in good condition (unbroken, etc.)?

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Was sufficient amount of sample sent for the tests indicated?

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

due to broken bottle

Was correct preservation added to samples?

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Bubbles present in sample #: None

Temperature of cooler upon receipt: 2.6°C on ice Cold Cool Ambient N/A

Explain any discrepancies: 1 liter bottle for MW-108 was broken in transit

Was client contacted? Yes Who was ^{emailed} ~~called~~? Jeffrey Fellows By whom? Rick Date: 12/17/14

Outcome of call: Jeffrey will have another sample taken -RB



January 21, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On December 18th, 3 samples were received by our laboratory and assigned our laboratory project number EV14120143. The project was identified as your Yakima Landfill / #1148008.020.023. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report has been revised and is being re-issued to include Hexachlorobenze results by EPA-8081. No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120143
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120143-01
CLIENT SAMPLE ID	MW-9A-121714	DATE RECEIVED:	12/18/2014
		COLLECTION DATE:	12/17/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/06/2015	CAS
Total Dissolved Solids	SM2540C	100	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	6.0	0.092	1	MG/L	12/19/2014	GAP
Fluoride	EPA-300.0	0.32	0.16	1	MG/L	12/19/2014	GAP
Nitrate as N	EPA-300.0	0.53	0.034	1	MG/L	12/19/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/19/2014	GAP
Sulfate	EPA-300.0	6.4	0.26	1	MG/L	12/19/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	67	15	1	MG/L	12/22/2014	CAS
Bicarbonate as CaCO3	SM2320B	67	15	1	MG/L	12/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
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CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
130 - 2nd Ave. S. ALS JOB#: EV14120143
Edmonds, WA 98020 ALS SAMPLE#: EV14120143-01
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 12/18/2014
CLIENT PROJECT: Yakima Landfill / #1148008.020.023 COLLECTION DATE: 12/17/2014 9:01:00 AM
CLIENT SAMPLE ID MW-9A-121714 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8082	89.0	12/24/2014	CAS
TCMX	EPA-8081	61.0	01/06/2015	CAS
DCB	EPA-8081	72.0	01/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120143
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120143-02
CLIENT SAMPLE ID	MW-108-121714	DATE RECEIVED:	12/18/2014
		COLLECTION DATE:	12/17/2014 10:27:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
PCB-1016	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	0.034	0.0051	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
DCB	EPA-8082	90.0	12/24/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120143
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120143-03
CLIENT SAMPLE ID:	MW-100-121714	DATE RECEIVED:	12/18/2014
		COLLECTION DATE:	12/17/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan II	EPA-8081	0.014	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/06/2015	CAS
Total Dissolved Solids	SM2540C	150	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	10	0.092	1	MG/L	12/19/2014	GAP
Fluoride	EPA-300.0	0.31	0.16	1	MG/L	12/19/2014	GAP
Nitrate as N	EPA-300.0	1.3	0.034	1	MG/L	12/19/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/19/2014	GAP
Sulfate	EPA-300.0	12	0.26	1	MG/L	12/19/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	120	15	1	MG/L	12/22/2014	CAS
Bicarbonate as CaCO3	SM2320B	120	15	1	MG/L	12/22/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120143
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120143-03
CLIENT SAMPLE ID	MW-100-121714	DATE RECEIVED:	12/18/2014
		COLLECTION DATE:	12/17/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8082	91.0	12/24/2014	CAS
TCMX	EPA-8081	65.0	01/06/2015	CAS
DCB	EPA-8081	76.0	01/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120143
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB1-12/24/2014 - Batch R247772 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-01/06/2015 - Batch R247775 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12222014 - Batch R247439 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	12/22/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
130 - 2nd Ave. S. ALS SDG#: EV14120143
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MBLK-12222014 - Batch R247439 - Water by SM2540C

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12192014 - Batch R247689 - Water by EPA-300.0

Table with 8 columns: ANALYTE, METHOD, RESULTS, REPORTING LIMITS, DILUTION FACTOR, UNITS, ANALYSIS DATE, ANALYSIS BY. Rows include Chloride, Fluoride, Nitrate as N, Nitrite as N, and Sulfate.

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-247780 - Batch R247780 - Water by SM2320B

Table with 8 columns: ANALYTE, METHOD, RESULTS, REPORTING LIMITS, DILUTION FACTOR, UNITS, ANALYSIS DATE, ANALYSIS BY. Rows include Alkalinity as CaCO3, Total and Bicarbonate as CaCO3.

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. **DATE:** 1/21/2015
 130 - 2nd Ave. S. **ALS SDG#:** EV14120143
 Edmonds, WA 98020 **WDOE ACCREDITATION:** C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R247772 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	104			12/24/2014	CAS
PCB-1016 - BSD	EPA-8082	87.0	18		12/24/2014	CAS
PCB-1260 - BS	EPA-8082	124			12/24/2014	CAS
PCB-1260 - BSD	EPA-8082	110	13		12/24/2014	CAS

ALS Test Batch ID: R247775 - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	87.5			01/03/2015	CAS
A-BHC - BSD	EPA-8081	78.0	11		01/03/2015	CAS
G-BHC - BS	EPA-8081	87.5			01/03/2015	CAS
G-BHC - BSD	EPA-8081	78.5	11		01/03/2015	CAS
B-BHC - BS	EPA-8081	80.5			01/03/2015	CAS
B-BHC - BSD	EPA-8081	73.5	9		01/03/2015	CAS
Heptachlor - BS	EPA-8081	83.5			01/03/2015	CAS
Heptachlor - BSD	EPA-8081	73.0	13		01/03/2015	CAS
D-BHC - BS	EPA-8081	93.0			01/03/2015	CAS
D-BHC - BSD	EPA-8081	83.5	11		01/03/2015	CAS
Aldrin - BS	EPA-8081	76.5			01/03/2015	CAS
Aldrin - BSD	EPA-8081	67.0	13		01/03/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	83.5			01/03/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	74.5	11		01/03/2015	CAS
Chlordane - BS	EPA-8081	80.5			01/03/2015	CAS
Chlordane - BSD	EPA-8081	72.5	10		01/03/2015	CAS
Endosulfan I - BS	EPA-8081	77.5			01/03/2015	CAS
Endosulfan I - BSD	EPA-8081	68.5	12		01/03/2015	CAS
4,4'-DDE - BS	EPA-8081	82.5			01/03/2015	CAS
4,4'-DDE - BSD	EPA-8081	74.0	11		01/03/2015	CAS
Dieldrin - BS	EPA-8081	85.5			01/03/2015	CAS
Dieldrin - BSD	EPA-8081	77.0	10		01/03/2015	CAS
Endrin - BS	EPA-8081	89.5			01/03/2015	CAS
Endrin - BSD	EPA-8081	80.0	11		01/03/2015	CAS
4,4'-DDD - BS	EPA-8081	86.0			01/03/2015	CAS
4,4'-DDD - BSD	EPA-8081	77.0	11		01/03/2015	CAS
Endosulfan II - BS	EPA-8081	82.5			01/03/2015	CAS
Endosulfan II - BSD	EPA-8081	74.5	10		01/03/2015	CAS
4,4'-DDT - BS	EPA-8081	85.0			01/03/2015	CAS
4,4'-DDT - BSD	EPA-8081	76.5	11		01/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120143
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Endrin Aldehyde - BS	EPA-8081	88.0			01/03/2015	CAS
Endrin Aldehyde - BSD	EPA-8081	81.5	8		01/03/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	91.5			01/03/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	83.0	10		01/03/2015	CAS
Methoxychlor - BS	EPA-8081	91.5			01/03/2015	CAS
Methoxychlor - BSD	EPA-8081	82.5	10		01/03/2015	CAS
Hexachlorobenzene - BS	EPA-8081	67.5			01/03/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	60.0	12		01/03/2015	CAS
Toxaphene - BS	EPA-8081	101			01/06/2015	CAS
Toxaphene - BSD	EPA-8081	94.9	6		01/06/2015	CAS

ALS Test Batch ID: R247439 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	95.0			12/22/2014	DLC

ALS Test Batch ID: R247689 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	97.0			12/19/2014	GAP
Chloride - BSD	EPA-300.0	96.0	1		12/19/2014	GAP
Fluoride - BS	EPA-300.0	104			12/19/2014	GAP
Fluoride - BSD	EPA-300.0	98.0	6		12/19/2014	GAP
Nitrate as N - BS	EPA-300.0	111			12/19/2014	GAP
Nitrate as N - BSD	EPA-300.0	107	4		12/19/2014	GAP
Nitrite as N - BS	EPA-300.0	99.0			12/19/2014	GAP
Nitrite as N - BSD	EPA-300.0	95.0	4		12/19/2014	GAP
Sulfate - BS	EPA-300.0	103			12/19/2014	GAP
Sulfate - BSD	EPA-300.0	106	3		12/19/2014	GAP

ALS Test Batch ID: R247780 - Water by SM2320B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total - BS	SM2320B	108			12/22/2014	CAS

CERTIFICATE OF ANALYSIS

APPROVED BY



Laboratory Director

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates

ALS Job #: E114/20143

Project: Yakima Landfill / # 1148008. 020. 230⁰²³

Received Date: 12/18/14 Received Time: 1:20pm By: SM

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered

FedEx Express First Overnight - but did not receive until 1:20pm.

Were custody seals on outside of sample?

If yes, how many? 1 Where? outside top^{of} cooler

Custody seal date: 12/17/14 Seal name: Landau

Yes No N/A

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

Sample Number Reagent Analyte

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: _____

Temperature of cooler upon receipt: 6.5°C on ice Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____



January 21, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On December 19th, 9 samples were received by our laboratory and assigned our laboratory project number EV14120151. The project was identified as your Yakima Landfill / #1148008.020.023. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report has been revised and is being re-issued to include Hexachlorobenze results by EPA-8081. No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
 130 - 2nd Ave. S.
 Edmonds, WA 98020

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023
 CLIENT SAMPLE ID: MW-12-121814

DATE: 1/21/2015
 ALS JOB#: EV14120151
 ALS SAMPLE#: EV14120151-01
 DATE RECEIVED: 12/19/2014
 COLLECTION DATE: 12/18/2014 9:25:00 AM
 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
PCB-1016	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	01/06/2015	CAS
Total Dissolved Solids	SM2540C	290	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	18	0.092	1	MG/L	12/19/2014	GAP
Fluoride	EPA-300.0	0.39	0.16	1	MG/L	12/19/2014	GAP
Nitrate as N	EPA-300.0	0.041	0.034	1	MG/L	12/19/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/19/2014	GAP
Sulfate	EPA-300.0	0.35	0.26	1	MG/L	12/19/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	260	0.0	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	260	0.0	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-01
CLIENT SAMPLE ID	MW-12-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8082	106	12/24/2014	CAS
TCMX	EPA-8081	60.0	01/06/2015	CAS
DCB	EPA-8081	74.0	01/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-02
CLIENT SAMPLE ID:	MW-101-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
PCB-1016	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0052	1	ug/L	12/24/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	01/06/2015	CAS
Total Dissolved Solids	SM2540C	260	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	12	0.092	1	MG/L	12/19/2014	GAP
Fluoride	EPA-300.0	0.19	0.16	1	MG/L	12/19/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/19/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/19/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/19/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	230	0.0	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	230	0.0	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-02
CLIENT SAMPLE ID	MW-101-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8082	103	12/24/2014	CAS
TCMX	EPA-8081	58.0	01/06/2015	CAS
DCB	EPA-8081	70.0	01/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-03
CLIENT SAMPLE ID	FPP-MW-2-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Total Dissolved Solids	SM2540C	240	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	18	0.092	1	MG/L	12/19/2014	GAP
Fluoride	EPA-300.0	0.49	0.16	1	MG/L	12/19/2014	GAP
Nitrate as N	EPA-300.0	0.063	0.034	1	MG/L	12/19/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/19/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/19/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	240	0.0	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	240	0.0	1	MG/L	12/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-04
CLIENT SAMPLE ID	FPP-MW-3-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 11:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/06/2015	CAS
Total Dissolved Solids	SM2540C	140	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	8.7	0.092	1	MG/L	12/19/2014	GAP
Fluoride	EPA-300.0	0.50	0.16	1	MG/L	12/19/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/19/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/19/2014	GAP
Sulfate	EPA-300.0	10	0.26	1	MG/L	12/19/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	120	0.0	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	120	0.0	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-04
CLIENT SAMPLE ID	FPP-MW-3-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 11:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8082	98.0	12/24/2014	CAS
TCMX	EPA-8081	65.0	01/06/2015	CAS
DCB	EPA-8081	75.0	01/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-05
CLIENT SAMPLE ID	MW-15-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 1:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
PCB-1016	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	12/24/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	ug/L	01/06/2015	CAS
Toxaphene	EPA-8081	U	0.52	1	ug/L	01/06/2015	CAS
Total Dissolved Solids	SM2540C	160	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	13	0.092	1	MG/L	12/19/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	12/19/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/19/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/19/2014	GAP
Sulfate	EPA-300.0	0.90	0.26	1	MG/L	12/19/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	110	0.0	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	110	0.0	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
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CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
130 - 2nd Ave. S. ALS JOB#: EV14120151
Edmonds, WA 98020 ALS SAMPLE#: EV14120151-05
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 12/19/2014
CLIENT PROJECT: Yakima Landfill / #1148008.020.023 COLLECTION DATE: 12/18/2014 1:50:00 PM
CLIENT SAMPLE ID MW-15-121814 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8082	98.0	12/24/2014	CAS
TCMX	EPA-8081	57.0	01/06/2015	CAS
DCB	EPA-8081	70.0	01/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-06
CLIENT SAMPLE ID	MW-14-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 1:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Total Dissolved Solids	SM2540C	72	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	3.7	0.092	1	MG/L	12/19/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	12/19/2014	GAP
Nitrate as N	EPA-300.0	0.22	0.034	1	MG/L	12/19/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/19/2014	GAP
Sulfate	EPA-300.0	3.3	0.26	1	MG/L	12/19/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	58	0.0	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	58	0.0	1	MG/L	12/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-07
CLIENT SAMPLE ID	MW-16-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 2:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Total Dissolved Solids	SM2540C	230	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	20	0.092	1	MG/L	12/19/2014	GAP
Fluoride	EPA-300.0	0.37	0.16	1	MG/L	12/19/2014	GAP
Nitrate as N	EPA-300.0	0.13	0.034	1	MG/L	12/19/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/19/2014	GAP
Sulfate	EPA-300.0	15	0.26	1	MG/L	12/19/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	190	0.0	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	190	0.0	1	MG/L	12/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-08
CLIENT SAMPLE ID	MW-17-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	0.0082	0.0050	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/06/2015	CAS
Total Dissolved Solids	SM2540C	250	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	20	0.46	5	MG/L	12/19/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	12/19/2014	GAP
Nitrate as N	EPA-300.0	0.072	0.034	1	MG/L	12/19/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/19/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/19/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	230	0.0	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	230	0.0	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-08
CLIENT SAMPLE ID	MW-17-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8082	93.0	12/24/2014	CAS
TCMX	EPA-8081	53.0	01/06/2015	CAS
DCB	EPA-8081	63.0	01/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-09
CLIENT SAMPLE ID	MW-DUP2-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/06/2015	CAS
Total Dissolved Solids	SM2540C	170	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	8.7	0.092	1	MG/L	12/19/2014	GAP
Fluoride	EPA-300.0	0.17	0.16	1	MG/L	12/19/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/19/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/19/2014	GAP
Sulfate	EPA-300.0	10	0.26	1	MG/L	12/19/2014	GAP
Alkalinity as CaCO3, Total	SM2320B	120	0.0	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	120	0.0	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120151-09
CLIENT SAMPLE ID	MW-DUP2-121814	DATE RECEIVED:	12/19/2014
		COLLECTION DATE:	12/18/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
DCB	EPA-8082	94.0	12/24/2014	CAS
TCMX	EPA-8081	58.0	01/06/2015	CAS
DCB	EPA-8081	72.0	01/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120151
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB1-12/24/2014 - Batch R247772 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/24/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/24/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-01/06/2015 - Batch R247775 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12222014 - Batch R247439 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	12/22/2014	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120151
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MBLK-12222014 - Batch R247439 - Water by SM2540C

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12222014 - Batch R247440 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	12/22/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12192014 - Batch R247689 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	12/19/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	12/19/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/19/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/19/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/19/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12302014 - Batch R247723 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total	SM2320B	U	9.0	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	U	9.0	1	MG/L	12/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120151
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R247772 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	104			12/24/2014	CAS
PCB-1016 - BSD	EPA-8082	87.0	18		12/24/2014	CAS
PCB-1260 - BS	EPA-8082	124			12/24/2014	CAS
PCB-1260 - BSD	EPA-8082	110	13		12/24/2014	CAS

ALS Test Batch ID: R247775 - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	87.5			01/03/2015	CAS
A-BHC - BSD	EPA-8081	78.0	11		01/03/2015	CAS
G-BHC - BS	EPA-8081	87.5			01/03/2015	CAS
G-BHC - BSD	EPA-8081	78.5	11		01/03/2015	CAS
B-BHC - BS	EPA-8081	80.5			01/03/2015	CAS
B-BHC - BSD	EPA-8081	73.5	9		01/03/2015	CAS
Heptachlor - BS	EPA-8081	83.5			01/03/2015	CAS
Heptachlor - BSD	EPA-8081	73.0	13		01/03/2015	CAS
D-BHC - BS	EPA-8081	93.0			01/03/2015	CAS
D-BHC - BSD	EPA-8081	83.5	11		01/03/2015	CAS
Aldrin - BS	EPA-8081	76.5			01/03/2015	CAS
Aldrin - BSD	EPA-8081	67.0	13		01/03/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	83.5			01/03/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	74.5	11		01/03/2015	CAS
Chlordane - BS	EPA-8081	80.5			01/03/2015	CAS
Chlordane - BSD	EPA-8081	72.5	10		01/03/2015	CAS
Endosulfan I - BS	EPA-8081	77.5			01/03/2015	CAS
Endosulfan I - BSD	EPA-8081	68.5	12		01/03/2015	CAS
4,4'-DDE - BS	EPA-8081	82.5			01/03/2015	CAS
4,4'-DDE - BSD	EPA-8081	74.0	11		01/03/2015	CAS
Dieldrin - BS	EPA-8081	85.5			01/03/2015	CAS
Dieldrin - BSD	EPA-8081	77.0	10		01/03/2015	CAS
Endrin - BS	EPA-8081	89.5			01/03/2015	CAS
Endrin - BSD	EPA-8081	80.0	11		01/03/2015	CAS
4,4'-DDD - BS	EPA-8081	86.0			01/03/2015	CAS
4,4'-DDD - BSD	EPA-8081	77.0	11		01/03/2015	CAS
Endosulfan II - BS	EPA-8081	82.5			01/03/2015	CAS
Endosulfan II - BSD	EPA-8081	74.5	10		01/03/2015	CAS
4,4'-DDT - BS	EPA-8081	85.0			01/03/2015	CAS
4,4'-DDT - BSD	EPA-8081	76.5	11		01/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14120151
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Endrin Aldehyde - BS	EPA-8081	88.0			01/03/2015	CAS
Endrin Aldehyde - BSD	EPA-8081	81.5	8		01/03/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	91.5			01/03/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	83.0	10		01/03/2015	CAS
Methoxychlor - BS	EPA-8081	91.5			01/03/2015	CAS
Methoxychlor - BSD	EPA-8081	82.5	10		01/03/2015	CAS
Hexachlorobenzene - BS	EPA-8081	67.5			01/03/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	60.0	12		01/03/2015	CAS
Toxaphene - BS	EPA-8081	101			01/06/2015	CAS
Toxaphene - BSD	EPA-8081	94.9	6		01/06/2015	CAS

ALS Test Batch ID: R247439 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	95.0			12/22/2014	DLC

ALS Test Batch ID: R247440 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	97.0			12/22/2014	DLC

ALS Test Batch ID: R247689 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	97.0			12/19/2014	GAP
Chloride - BSD	EPA-300.0	96.0	1		12/19/2014	GAP
Fluoride - BS	EPA-300.0	104			12/19/2014	GAP
Fluoride - BSD	EPA-300.0	98.0	6		12/19/2014	GAP
Nitrate as N - BS	EPA-300.0	111			12/19/2014	GAP
Nitrate as N - BSD	EPA-300.0	107	4		12/19/2014	GAP
Nitrite as N - BS	EPA-300.0	99.0			12/19/2014	GAP
Nitrite as N - BSD	EPA-300.0	95.0	4		12/19/2014	GAP
Sulfate - BS	EPA-300.0	103			12/19/2014	GAP
Sulfate - BSD	EPA-300.0	106	3		12/19/2014	GAP

ALS Test Batch ID: R247723 - Water by SM2320B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total - BS	SM2320B	109			12/30/2014	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/21/2015
130 - 2nd Ave. S. ALS SDG#: EV14120151
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY CONTROL SAMPLE RESULTS

APPROVED BY

Laboratory Director

- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080



Chain-of-Custody Record

EV14120151

Date 12/18/14
Page 1 of 1

Project Name Yakima Landfill Project No. 146008.020.250
 Project Location/Event Old Yakima Landfill/Quarterly Sampling
 Sampler's Name Stephanie Renardo/Share Kostka
 Project Contact Jeffrey Fellows
 Send Results To S. Fellows, A. Halvorsen

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters	Observations/Comments
1 MW-12-121814	12/18/14	0925	AQ	3	Alkalinity/TDS Bicarbonate TPB's Migrated Pesticides	X Allow water samples to settle, collect aliquot from clear portion X NWTPH-Dx - run acid wash/silica gel cleanup
2 PAW-101-121814	12/18/14	0850		3		
3 FPP-MW-2-121814	12/18/14	1130		3		
4 FPP-MW-3-121814	12/18/14	1101		3		
5 MW-15-121814	12/18/14	1350		1		
6 MW-14-121814	12/18/14	1345		1		
7 MW-16-121814	12/18/14	1450		3		
8 MW-17-121814	12/18/14	1505		3		
9 MW-DUP 2-121814	12/18/14	0901		3		

Turnaround Time
 Standard
 Accelerated

Method of Shipment on ice

Received by Stephanie Renardo Signature
 Printed Name
 Company
 Date 12/18/14 Time 1615

Relinquished by Share Kostka Signature
 Printed Name
 Company
 Date 12/19/14 Time 10:40a

Received by Shawn Robinson Signature
 Printed Name
 Company
 Date 12/19/14 Time 10:40a

Other: Fluoride, Nitrate, Nitrite, Chloride, Sulfate

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV14/20151

Project: Yakima Landfill / #1148008.020. ⁰²³~~230~~

Received Date: 12/19/14 Received Time: 10:40am By: S

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express 1st Overnight

	Yes	No	N/A
Were custody seals on outside of sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1 each</u> Where? <u>on top</u>			
Custody seal date: <u>12/18/14</u> Seal name: <u>Landau</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?
Bubbles present in sample #: _____

Temperature of cooler upon receipt: 2.9°C, 1.5°C Cold Cool Ambient N/A
both on ice

Explain any discrepancies: _____

Was client contacted? Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____



January 26, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On December 20th, 29 samples were received by our laboratory and assigned our laboratory project number EV14120162. The project was identified as your Yakima Landfill / #1148008.020.023. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report has been revised to remove the extra result for 1,2,4-Trichlorobenzene. No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-01
CLIENT SAMPLE ID	MW-109-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/22/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/22/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/22/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/22/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/22/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/22/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/22/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/22/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/22/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/22/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/22/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-01
CLIENT SAMPLE ID	MW-109-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/22/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/22/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/22/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/22/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/22/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/22/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/22/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/22/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-01
CLIENT SAMPLE ID	MW-109-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	0.012	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-01
CLIENT SAMPLE ID	MW-109-121914	DATE RECEIVED:	12/20/2014
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/29/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/29/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/29/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	12/29/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/29/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/29/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/29/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-01
CLIENT SAMPLE ID	MW-109-121914	DATE RECEIVED:	12/20/2014
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan II	EPA-8081	U	0.021	1	ug/L	01/05/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/05/2015	CAS
Total Dissolved Solids	SM2540C	140	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	9.5	0.092	1	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	0.29	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	16	0.26	1	MG/L	12/20/2014	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL
Arsenic	EPA-200.8	U	0.45	1	ug/L	01/14/2015	RAL
Barium	EPA-200.8	11	1.0	1	ug/L	01/14/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium	EPA-200.8	29000	100	1	ug/L	01/14/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron	EPA-200.8	92	50	1	ug/L	01/14/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium	EPA-200.8	9600	50	1	ug/L	01/14/2015	RAL
Manganese	EPA-200.8	150	2.0	1	ug/L	01/14/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium	EPA-200.8	13000	50	1	ug/L	01/14/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	01/02/2015	RAL
Barium (Dissolved)	EPA-200.8	11	1.0	1	ug/L	01/02/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium (Dissolved)	EPA-200.8	28000	100	1	ug/L	01/02/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-01
CLIENT SAMPLE ID	MW-109-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	01/02/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium (Dissolved)	EPA-200.8	9500	50	1	ug/L	01/02/2015	RAL
Manganese (Dissolved)	EPA-200.8	110	2.0	1	ug/L	01/02/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium (Dissolved)	EPA-200.8	13000	50	1	ug/L	01/02/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	110	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	110	15	1	MG/L	12/30/2014	CAS
Ammonia as N	EPA-350.1	0.15	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.2	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	90.3	12/20/2014	EBS
C25	NWTPH-HCID	76.6	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	83.2	12/20/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	102	12/22/2014	GAP
Toluene-d8	EPA-8260	95.6	12/22/2014	GAP
4-Bromofluorobenzene	EPA-8260	88.2	12/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	58.4	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	97.8	01/06/2015	GAP
2-Fluorophenol	EPA-8270	47.6	01/07/2015	GAP
Phenol-d5	EPA-8270	27.2	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	76.2	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	83.3	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	97.0	01/07/2015	GAP
Terphenyl-d14	EPA-8270	96.3	01/07/2015	GAP
DCB	EPA-8082	81.0	12/29/2014	CAS
TCMX	EPA-8081	68.0	01/05/2015	CAS
DCB	EPA-8081	73.0	01/05/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-02
CLIENT SAMPLE ID	MW-18-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 12:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/22/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/22/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/22/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/22/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/22/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/22/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/22/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/22/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/22/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/22/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/22/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-02
CLIENT SAMPLE ID	MW-18-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 12:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/22/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/22/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/22/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/22/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/22/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/22/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/22/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/22/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	0.012	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-02
CLIENT SAMPLE ID	MW-18-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 12:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	0.015	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	0.015	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-02
CLIENT SAMPLE ID	MW-18-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 12:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	32	0.75	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/30/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-02
CLIENT SAMPLE ID	MW-18-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 12:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan II	EPA-8081	U	0.019	1	ug/L	01/05/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/05/2015	CAS
Total Dissolved Solids	SM2540C	250	5.0	1	MG/L	12/22/2014	DLC
Chloride	EPA-300.0	18	0.46	5	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	0.047	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/20/2014	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL
Arsenic	EPA-200.8	7.5	0.45	1	ug/L	01/14/2015	RAL
Barium	EPA-200.8	42	1.0	1	ug/L	01/14/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium	EPA-200.8	46000	100	1	ug/L	01/14/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron	EPA-200.8	40000	50	1	ug/L	01/14/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium	EPA-200.8	17000	50	1	ug/L	01/14/2015	RAL
Manganese	EPA-200.8	3600	2.0	1	ug/L	01/14/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium	EPA-200.8	15000	50	1	ug/L	01/14/2015	RAL
Arsenic (Dissolved)	EPA-200.8	7.3	0.45	1	ug/L	01/02/2015	RAL
Barium (Dissolved)	EPA-200.8	37	1.0	1	ug/L	01/02/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium (Dissolved)	EPA-200.8	42000	100	1	ug/L	01/02/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-02
CLIENT SAMPLE ID	MW-18-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 12:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron (Dissolved)	EPA-200.8	37000	50	1	ug/L	01/02/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium (Dissolved)	EPA-200.8	16000	50	1	ug/L	01/02/2015	RAL
Manganese (Dissolved)	EPA-200.8	3300	2.0	1	ug/L	01/02/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium (Dissolved)	EPA-200.8	15000	50	1	ug/L	01/02/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	220	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	220	15	1	MG/L	12/30/2014	CAS
Ammonia as N	EPA-350.1	0.65	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	5.7	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	75.9	12/20/2014	EBS
C25	NWTPH-HCID	69.3	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	80.0	12/20/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	115	12/22/2014	GAP
Toluene-d8	EPA-8260	105	12/22/2014	GAP
4-Bromofluorobenzene	EPA-8260	101	12/22/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	62.9	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	97.8	01/06/2015	GAP
2-Fluorophenol	EPA-8270	47.6	01/07/2015	GAP
Phenol-d5	EPA-8270	29.8	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	80.5	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	89.1	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	101	01/07/2015	GAP
Terphenyl-d14	EPA-8270	100	01/07/2015	GAP
DCB	EPA-8082	91.0	12/30/2014	CAS
TCMX	EPA-8081	66.0	01/05/2015	CAS
DCB	EPA-8081	76.0	01/05/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-03
CLIENT SAMPLE ID	TP-MW-2-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 11:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	>310	310	1	ug/L	12/20/2014	EBS
TPH-Diesel Range	NWTPH-DX	1500	130	1	ug/L	12/29/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	470	130	1	ug/L	12/29/2014	EBS
TPH-Oil Range	NWTPH-DX	450	250	1	ug/L	12/29/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	300	250	1	ug/L	12/29/2014	EBS
Total Dissolved Solids	SM2540C	270	5.0	1	MG/L	12/23/2014	DLC
Chloride	EPA-300.0	9.0	0.092	1	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	0.47	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	1.2	0.26	1	MG/L	12/20/2014	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL
Arsenic	EPA-200.8	3.3	0.45	1	ug/L	01/14/2015	RAL
Barium	EPA-200.8	21	1.0	1	ug/L	01/14/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium	EPA-200.8	32000	100	1	ug/L	01/14/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron	EPA-200.8	12000	50	1	ug/L	01/14/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium	EPA-200.8	11000	50	1	ug/L	01/14/2015	RAL
Manganese	EPA-200.8	1500	2.0	1	ug/L	01/14/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium	EPA-200.8	19000	50	1	ug/L	01/14/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.7	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	19	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	33000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	12000	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	1500	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-03
CLIENT SAMPLE ID	TP-MW-2-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 11:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Sodium (Dissolved)	EPA-200.8	20000	50	1	ug/L	01/14/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	170	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	170	15	1	MG/L	12/30/2014	CAS
Ammonia as N	EPA-350.1	0.79	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	9.6	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	92.4	12/20/2014	EBS
C25	NWTPH-HCID	72.7	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	79.3	12/20/2014	EBS
C25	NWTPH-DX	109	12/29/2014	EBS
C25	NWTPH-DX w/ SGA	121	12/29/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-04
CLIENT SAMPLE ID	TP-MW-1-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 10:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
Total Dissolved Solids	SM2540C	150	5.0	1	MG/L	12/23/2014	DLC
Chloride	EPA-300.0	5.5	0.092	1	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	0.34	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	0.16	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	5.5	0.26	1	MG/L	12/20/2014	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL
Arsenic	EPA-200.8	U	0.45	1	ug/L	01/14/2015	RAL
Barium	EPA-200.8	6.7	1.0	1	ug/L	01/14/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium	EPA-200.8	13000	100	1	ug/L	01/14/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron	EPA-200.8	130	50	1	ug/L	01/14/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium	EPA-200.8	4500	50	1	ug/L	01/14/2015	RAL
Manganese	EPA-200.8	9.7	2.0	1	ug/L	01/14/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium	EPA-200.8	9300	50	1	ug/L	01/14/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	5.3	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	14000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	4600	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	2.5	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	9700	50	1	ug/L	01/14/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	64	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	64	15	1	MG/L	12/30/2014	CAS
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-04
CLIENT SAMPLE ID	TP-MW-1-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 10:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	1.9	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	100	12/20/2014	EBS
C25	NWTPH-HCID	76.0	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	80.0	12/20/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-05
CLIENT SAMPLE ID	MW-102-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 3:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-05
CLIENT SAMPLE ID	MW-102-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 3:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	0.015	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	0.028	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-05
CLIENT SAMPLE ID	MW-102-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 3:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-05
CLIENT SAMPLE ID	MW-102-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 3:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	26	0.75	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/30/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-05
CLIENT SAMPLE ID	MW-102-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 3:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/05/2015	CAS
Total Dissolved Solids	SM2540C	190	5.0	1	MG/L	12/23/2014	DLC
Chloride	EPA-300.0	11	0.092	1	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	0.28	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	10	0.26	1	MG/L	12/20/2014	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL
Arsenic	EPA-200.8	U	0.45	1	ug/L	01/14/2015	RAL
Barium	EPA-200.8	27	1.0	1	ug/L	01/14/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium	EPA-200.8	25000	100	1	ug/L	01/14/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron	EPA-200.8	5300	50	1	ug/L	01/14/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium	EPA-200.8	9300	50	1	ug/L	01/14/2015	RAL
Manganese	EPA-200.8	710	2.0	1	ug/L	01/14/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium	EPA-200.8	14000	50	1	ug/L	01/14/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	27	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	26000	100	1	ug/L	01/14/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-05
CLIENT SAMPLE ID	MW-102-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 3:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	5400	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	9900	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	720	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	16000	50	1	ug/L	01/14/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	130	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	130	15	1	MG/L	12/30/2014	CAS
Ammonia as N	EPA-350.1	2.2	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.5	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	74.9	12/20/2014	EBS
C25	NWTPH-HCID	72.2	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	79.2	12/20/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	105	12/23/2014	GAP
Toluene-d8	EPA-8260	94.9	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	99.6	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	61.0	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	103	01/06/2015	GAP
2-Fluorophenol	EPA-8270	48.4	01/07/2015	GAP
Phenol-d5	EPA-8270	29.3	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	78.0	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	85.7	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	102	01/07/2015	GAP
Terphenyl-d14	EPA-8270	99.5	01/07/2015	GAP
DCB	EPA-8082	89.0	12/30/2014	CAS
TCMX	EPA-8081	67.0	01/05/2015	CAS
DCB	EPA-8081	76.0	01/05/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-06
CLIENT SAMPLE ID	MW-103-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-06
CLIENT SAMPLE ID	MW-103-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	0.020	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-06
CLIENT SAMPLE ID	MW-103-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-06
CLIENT SAMPLE ID	MW-103-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	38	0.75	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/30/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1242	EPA-8082	0.0080	0.0050	1	ug/L	12/30/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1254	EPA-8082	U	0.0057	1	ug/L	12/30/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-06
CLIENT SAMPLE ID	MW-103-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDD	EPA-8081	0.12	0.010	1	ug/L	01/05/2015	CAS
Endosulfan II	EPA-8081	U	0.019	1	ug/L	01/05/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/05/2015	CAS
Total Dissolved Solids	SM2540C	300	5.0	1	MG/L	12/23/2014	DLC
Chloride	EPA-300.0	24	0.46	5	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	0.46	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	0.29	0.26	1	MG/L	12/20/2014	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL
Arsenic	EPA-200.8	5.3	0.45	1	ug/L	01/14/2015	RAL
Barium	EPA-200.8	58	1.0	1	ug/L	01/14/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium	EPA-200.8	43000	100	1	ug/L	01/14/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron	EPA-200.8	29000	50	1	ug/L	01/14/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium	EPA-200.8	15000	50	1	ug/L	01/14/2015	RAL
Manganese	EPA-200.8	2900	2.0	1	ug/L	01/14/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium	EPA-200.8	23000	50	1	ug/L	01/14/2015	RAL
Arsenic (Dissolved)	EPA-200.8	4.9	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	55	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	43000	100	1	ug/L	01/14/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-06
CLIENT SAMPLE ID	MW-103-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	29000	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	15000	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	2900	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	23000	50	1	ug/L	01/14/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	210	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	210	15	1	MG/L	12/30/2014	CAS
Ammonia as N	EPA-350.1	2.0	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.3	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	81.4	12/20/2014	EBS
C25	NWTPH-HCID	83.8	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	80.3	12/20/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	105	12/23/2014	GAP
Toluene-d8	EPA-8260	95.5	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	103	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	68.3	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	102	01/06/2015	GAP
2-Fluorophenol	EPA-8270	56.1	01/07/2015	GAP
Phenol-d5	EPA-8270	33.3	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	84.6	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	93.3	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	112	01/07/2015	GAP
Terphenyl-d14	EPA-8270	100	01/07/2015	GAP
DCB	EPA-8082	87.0	12/30/2014	CAS
TCMX	EPA-8081	62.0	01/05/2015	CAS
DCB	EPA-8081	72.0	01/05/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-07
CLIENT SAMPLE ID	MW-6-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 1:31:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
Total Dissolved Solids	SM2540C	250	5.0	1	MG/L	12/23/2014	DLC
Chloride	EPA-300.0	17	0.46	5	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	0.41	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/20/2014	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL
Arsenic	EPA-200.8	2.5	0.45	1	ug/L	01/14/2015	RAL
Barium	EPA-200.8	55	1.0	1	ug/L	01/14/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium	EPA-200.8	34000	100	1	ug/L	01/14/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron	EPA-200.8	24000	50	1	ug/L	01/14/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium	EPA-200.8	11000	50	1	ug/L	01/14/2015	RAL
Manganese	EPA-200.8	2300	2.0	1	ug/L	01/14/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium	EPA-200.8	14000	50	1	ug/L	01/14/2015	RAL
Arsenic (Dissolved)	EPA-200.8	1.7	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	55	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	35000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	23000	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	2300	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	14000	50	1	ug/L	01/14/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	160	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	160	15	1	MG/L	12/30/2014	CAS
Ammonia as N	EPA-350.1	1.1	0.050	1	MG/L	01/05/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-07
CLIENT SAMPLE ID	MW-6-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 1:31:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	4.7	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	109	12/20/2014	EBS
C25	NWTPH-HCID	81.7	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	77.9	12/20/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-08
CLIENT SAMPLE ID	FPP-MW-1-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 2:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range	NWTPH-DX w/ SGA	1400	130	1	ug/L	12/26/2014	EBS
TPH-Diesel Range	NWTPH-DX	3600	130	1	ug/L	12/29/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	260	250	1	ug/L	12/26/2014	EBS
TPH-Oil Range	NWTPH-DX	1000	250	1	ug/L	12/29/2014	EBS
Naphthalene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	0.013	0.0092	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP
Phenanthrene	EPA-8270 SIM	0.018	0.014	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Total Dissolved Solids	SM2540C	490	5.0	1	MG/L	12/23/2014	DLC
Chloride	EPA-300.0	44	0.92	10	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	0.29	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	0.038	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/20/2014	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL
Arsenic	EPA-200.8	2.3	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	100	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	65000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	43000	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-08
CLIENT SAMPLE ID	FPP-MW-1-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 2:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Magnesium	EPA-200.8	19000	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	3800	2.0	1	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL
Sodium	EPA-200.8	53000	50	1	ug/L	01/15/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.3	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	99	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	64000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	43000	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	19000	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	3700	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	53000	50	1	ug/L	01/14/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	320	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	320	15	1	MG/L	12/30/2014	CAS
Ammonia as N	EPA-350.1	3.6	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	21	5.0	10	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX w/ SGA	114	12/26/2014	EBS
C25	NWTPH-DX	108	12/29/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	71.1	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	92.4	01/06/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.
 Oil range product results biased high due to diesel range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-09
CLIENT SAMPLE ID	MW-11-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 11:21:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-09
CLIENT SAMPLE ID	MW-11-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 11:21:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-09
CLIENT SAMPLE ID	MW-11-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 11:21:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-09
CLIENT SAMPLE ID	MW-11-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 11:21:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	53	0.75	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/30/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-09
CLIENT SAMPLE ID	MW-11-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 11:21:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan II	EPA-8081	U	0.017	1	ug/L	01/05/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/05/2015	CAS
Total Dissolved Solids	SM2540C	240	5.0	1	MG/L	12/23/2014	DLC
Chloride	EPA-300.0	20	0.092	1	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	0.22	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	0.29	0.26	1	MG/L	12/20/2014	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL
Arsenic	EPA-200.8	3.9	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	52	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	38000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	31000	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL
Magnesium	EPA-200.8	13000	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	1900	2.0	1	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL
Sodium	EPA-200.8	19000	50	1	ug/L	01/15/2015	RAL
Arsenic (Dissolved)	EPA-200.8	4.1	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	54	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	38000	100	1	ug/L	01/14/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-09
CLIENT SAMPLE ID	MW-11-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 11:21:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	32000	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	1900	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	19000	50	1	ug/L	01/14/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	180	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	180	15	1	MG/L	12/30/2014	CAS
Ammonia as N	EPA-350.1	1.3	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.0	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	76.3	12/20/2014	EBS
C25	NWTPH-HCID	76.9	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	80.2	12/20/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	106	12/23/2014	GAP
Toluene-d8	EPA-8260	109	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	100	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	68.7	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	102	01/06/2015	GAP
2-Fluorophenol	EPA-8270	54.9	01/07/2015	GAP
Phenol-d5	EPA-8270	32.1	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	84.2	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	90.3	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	118	01/07/2015	GAP
Terphenyl-d14	EPA-8270	109	01/07/2015	GAP
DCB	EPA-8082	93.0	12/30/2014	CAS
TCMX	EPA-8081	65.0	01/05/2015	CAS
DCB	EPA-8081	78.0	01/05/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-10
CLIENT SAMPLE ID	MW-106-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	>310	310	1	ug/L	12/20/2014	EBS
TPH-Diesel Range	NWTPH-DX	670	130	1	ug/L	12/29/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	170	130	1	ug/L	12/29/2014	EBS
TPH-Oil Range	NWTPH-DX	300	250	1	ug/L	12/29/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	250	1	ug/L	12/29/2014	EBS
Vinyl Chloride	EPA-8260 SIM	0.38	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-10
CLIENT SAMPLE ID	MW-106-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	2.8	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	0.052	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	0.22	0.020	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-10
CLIENT SAMPLE ID	MW-106-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	0.13	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	0.010	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-10
CLIENT SAMPLE ID	MW-106-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	4.2	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	60	0.75	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/30/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1242	EPA-8082	0.023	0.0050	1	ug/L	12/30/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-10
CLIENT SAMPLE ID	MW-106-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
B-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/05/2015	CAS
Total Dissolved Solids	SM2540C	460	5.0	1	MG/L	12/23/2014	DLC
Chloride	EPA-300.0	17	0.092	1	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	0.26	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	0.29	0.26	1	MG/L	12/20/2014	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL
Arsenic	EPA-200.8	7.9	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	140	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	75000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	57000	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL
Magnesium	EPA-200.8	23000	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	5500	10	5	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL
Sodium	EPA-200.8	30000	50	1	ug/L	01/15/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-10
CLIENT SAMPLE ID	MW-106-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Arsenic (Dissolved)	EPA-200.8	8.4	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	140	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	76000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	56000	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	23000	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	5700	10	5	ug/L	01/15/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	30000	50	1	ug/L	01/14/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	400	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	400	15	1	MG/L	12/30/2014	CAS
Ammonia as N	EPA-350.1	9.0	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	11	1.0	2	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	80.4	12/20/2014	EBS
C25	NWTPH-HCID	75.6	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	79.1	12/20/2014	EBS
C25	NWTPH-DX	99.4	12/29/2014	EBS
C25	NWTPH-DX w/ SGA	117	12/29/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	106	12/23/2014	GAP
Toluene-d8	EPA-8260	95.4	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	103	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	67.0	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	97.8	01/06/2015	GAP
2-Fluorophenol	EPA-8270	52.8	01/07/2015	GAP
Phenol-d5	EPA-8270	32.5	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	84.7	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	90.6	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	116	01/07/2015	GAP
Terphenyl-d14	EPA-8270	107	01/07/2015	GAP
DCB	EPA-8082	78.0	12/30/2014	CAS
TCMX	EPA-8081	53.0	01/05/2015	CAS
DCB	EPA-8081	60.0	01/05/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-10
CLIENT SAMPLE ID	MW-106-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered diesel.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-11
CLIENT SAMPLE ID	MW-8-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 8:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-11
CLIENT SAMPLE ID	MW-8-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 8:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-11
CLIENT SAMPLE ID	MW-8-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 8:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-11
CLIENT SAMPLE ID	MW-8-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 8:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	49	0.75	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
PCB-1016	EPA-8082	U	0.0053	1	ug/L	12/30/2014	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	12/30/2014	CAS
PCB-1232	EPA-8082	U	0.0053	1	ug/L	12/30/2014	CAS
PCB-1242	EPA-8082	0.010	0.0053	1	ug/L	12/30/2014	CAS
PCB-1248	EPA-8082	U	0.0053	1	ug/L	12/30/2014	CAS
PCB-1254	EPA-8082	U	0.0053	1	ug/L	12/30/2014	CAS
PCB-1260	EPA-8082	U	0.0053	1	ug/L	12/30/2014	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-11
CLIENT SAMPLE ID	MW-8-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 8:35:00 AM
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
Endosulfan II	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	ug/L	01/05/2015	CAS
Toxaphene	EPA-8081	U	0.53	1	ug/L	01/05/2015	CAS
Total Dissolved Solids	SM2540C	300	5.0	1	MG/L	12/23/2014	DLC
Chloride	EPA-300.0	21	0.46	5	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	0.26	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	0.44	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	0.82	0.26	1	MG/L	12/20/2014	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL
Arsenic	EPA-200.8	1.2	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	65	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	39000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	6300	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL
Magnesium	EPA-200.8	18000	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	2000	2.0	1	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL
Sodium	EPA-200.8	28000	50	1	ug/L	01/15/2015	RAL
Arsenic (Dissolved)	EPA-200.8	0.68	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	64	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	38000	100	1	ug/L	01/14/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-11
CLIENT SAMPLE ID	MW-8-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 8:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	7700	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	17000	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	2000	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	28000	50	1	ug/L	01/14/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	260	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	260	15	1	MG/L	12/30/2014	CAS
Ammonia as N	EPA-350.1	8.9	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.5	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	81.6	12/20/2014	EBS
C25	NWTPH-HCID	75.8	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	81.6	12/20/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	105	12/23/2014	GAP
Toluene-d8	EPA-8260	96.7	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	100	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	68.3	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	99.0	01/06/2015	GAP
2-Fluorophenol	EPA-8270	54.0	01/07/2015	GAP
Phenol-d5	EPA-8270	30.8	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	85.1	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	88.2	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	117	01/07/2015	GAP
Terphenyl-d14	EPA-8270	109	01/07/2015	GAP
DCB	EPA-8082	92.0	12/30/2014	CAS
TCMX	EPA-8081	61.0	01/05/2015	CAS
DCB	EPA-8081	72.0	01/05/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-12
CLIENT SAMPLE ID	MW-DUP1-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	>310	310	1	ug/L	12/20/2014	EBS
TPH-Diesel Range	NWTPH-DX	640	130	1	ug/L	12/29/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	190	130	1	ug/L	12/29/2014	EBS
TPH-Oil Range	NWTPH-DX	310	250	1	ug/L	12/29/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	250	1	ug/L	12/29/2014	EBS
Vinyl Chloride	EPA-8260 SIM	0.39	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-12
CLIENT SAMPLE ID	MW-DUP1-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	3.0	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	0.045	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	0.19	0.020	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-12
CLIENT SAMPLE ID	MW-DUP1-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	0.10	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP
Phenanthrene	EPA-8270 SIM	0.025	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	0.012	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	0.011	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-12
CLIENT SAMPLE ID	MW-DUP1-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	3.6	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	81	0.75	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/30/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1242	EPA-8082	0.017	0.0050	1	ug/L	12/30/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/30/2014	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-12
CLIENT SAMPLE ID	MW-DUP1-121914	DATE RECEIVED:	12/20/2014
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
B-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/05/2015	CAS
Total Dissolved Solids	SM2540C	490	5.0	1	MG/L	12/23/2014	DLC
Chloride	EPA-300.0	19	0.092	1	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	0.24	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	0.31	0.26	1	MG/L	12/20/2014	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL
Arsenic	EPA-200.8	8.0	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	140	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	76000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	55000	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL
Magnesium	EPA-200.8	23000	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	5400	10	5	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL
Sodium	EPA-200.8	31000	50	1	ug/L	01/15/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-12
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		COLLECTION DATE:	12/19/2014 9:01:00 AM
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Arsenic (Dissolved)	EPA-200.8	7.9	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	140	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	77000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	56000	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	23000	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	5600	10	5	ug/L	01/15/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	30000	50	1	ug/L	01/14/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	400	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	400	15	1	MG/L	12/30/2014	CAS
Ammonia as N	EPA-350.1	9.0	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	11	1.0	2	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	88.1	12/20/2014	EBS
C25	NWTPH-HCID	78.6	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	79.8	12/20/2014	EBS
C25	NWTPH-DX	103	12/29/2014	EBS
C25	NWTPH-DX w/ SGA	109	12/29/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	105	12/23/2014	GAP
Toluene-d8	EPA-8260	102	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	101	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	37.5	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	88.0	01/06/2015	GAP
2-Fluorophenol	EPA-8270	20.6 GS1	01/07/2015	GAP
Phenol-d5	EPA-8270	15.6	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	67.0	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	74.9	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	53.0	01/07/2015	GAP
Terphenyl-d14	EPA-8270	91.4	01/07/2015	GAP
DCB	EPA-8082	78.0	12/30/2014	CAS
TCMX	EPA-8081	53.0	01/05/2015	CAS
DCB	EPA-8081	62.0	01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-12
CLIENT SAMPLE ID	MW-DUP1-121914	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/19/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

GS1 - Surrogate outside of control limits due to matrix effect.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered diesel.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-13
CLIENT SAMPLE ID	MW-101-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	>310	310	1	ug/L	12/20/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	140	130	1	ug/L	12/26/2014	EBS
TPH-Diesel Range	NWTPH-DX	450	130	1	ug/L	12/29/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	250	1	ug/L	12/26/2014	EBS
TPH-Oil Range	NWTPH-DX	410	250	1	ug/L	12/29/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-13
CLIENT SAMPLE ID	MW-101-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	0.014	0.014	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-13
CLIENT SAMPLE ID	MW-101-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-13
CLIENT SAMPLE ID	MW-101-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	30	0.76	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/26/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/06/2015	RAL
Arsenic	EPA-200.8	1.6	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	50	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	47000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	22000	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-13
CLIENT SAMPLE ID	MW-101-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Magnesium	EPA-200.8	15000	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	2000	2.0	1	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL
Sodium	EPA-200.8	21000	50	1	ug/L	01/15/2015	RAL
Arsenic (Dissolved)	EPA-200.8	1.5	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	51	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	48000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	23000	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	15000	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	2000	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	22000	50	1	ug/L	01/14/2015	RAL
Ammonia as N	EPA-350.1	1.7	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	8.6	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	83.5	12/20/2014	EBS
C25	NWTPH-HCID	75.0	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	79.1	12/20/2014	EBS
C25	NWTPH-DX w/ SGA	120	12/26/2014	EBS
C25	NWTPH-DX	113	12/29/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	103	12/23/2014	GAP
Toluene-d8	EPA-8260	96.4	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	89.6	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	59.2	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	86.4	01/06/2015	GAP
2-Fluorophenol	EPA-8270	4.06 GS1	01/07/2015	GAP
Phenol-d5	EPA-8270	14.0	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	40.5 GS1	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	60.2	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	94.2	01/07/2015	GAP
Terphenyl-d14	EPA-8270	92.9	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-13
CLIENT SAMPLE ID	MW-101-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

GS1 - Surrogate outside of control limits due to matrix effect.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered diesel.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-14
CLIENT SAMPLE ID	FPP-MW-2-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range	NWTPH-DX w/ SGA	220	130	1	ug/L	12/26/2014	EBS
TPH-Diesel Range	NWTPH-DX	670	130	1	ug/L	12/29/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	250	1	ug/L	12/26/2014	EBS
TPH-Oil Range	NWTPH-DX	270	250	1	ug/L	12/29/2014	EBS
Naphthalene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/26/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/06/2015	RAL
Arsenic	EPA-200.8	4.2	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	36	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	38000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	18000	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL
Magnesium	EPA-200.8	13000	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	1600	2.0	1	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL
Sodium	EPA-200.8	38000	50	1	ug/L	01/15/2015	RAL
Arsenic (Dissolved)	EPA-200.8	4.2	0.45	1	ug/L	01/14/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-14
CLIENT SAMPLE ID	FPP-MW-2-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Barium (Dissolved)	EPA-200.8	33	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	36000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	17000	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	1500	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	36000	50	1	ug/L	01/14/2015	RAL
Ammonia as N	EPA-350.1	2.1	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	6.2	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX w/ SGA	107	12/26/2014	EBS
C25	NWTPH-DX	102	12/29/2014	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	69.9	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	94.7	01/06/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered diesel.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-15
CLIENT SAMPLE ID	MW-15-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 1:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-15
CLIENT SAMPLE ID	MW-15-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 1:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	0.037	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-15
CLIENT SAMPLE ID	MW-15-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 1:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	0.028	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-15
CLIENT SAMPLE ID	MW-15-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 1:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/26/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/06/2015	RAL
Arsenic	EPA-200.8	U	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	28	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	23000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	6400	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL
Magnesium	EPA-200.8	9000	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	830	2.0	1	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-15
CLIENT SAMPLE ID	MW-15-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 1:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Sodium	EPA-200.8	9900	50	1	ug/L	01/15/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	28	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	24000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	5500	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	9600	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	850	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	10000	50	1	ug/L	01/14/2015	RAL
Ammonia as N	EPA-350.1	0.63	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.9	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	84.9	12/20/2014	EBS
C25	NWTPH-HCID	72.7	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	82.2	12/20/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	114	12/23/2014	GAP
Toluene-d8	EPA-8260	86.0	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	101	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	58.9	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	93.5	01/06/2015	GAP
2-Fluorophenol	EPA-8270	41.2	01/07/2015	GAP
Phenol-d5	EPA-8270	19.3	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	63.6	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	70.4	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	87.8	01/07/2015	GAP
Terphenyl-d14	EPA-8270	94.0	01/07/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-16
CLIENT SAMPLE ID	FPP-MW-3-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 11:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/20/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/20/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-16
CLIENT SAMPLE ID	FPP-MW-3-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 11:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-16
CLIENT SAMPLE ID	FPP-MW-3-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 11:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	0.010	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-16
CLIENT SAMPLE ID	FPP-MW-3-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 11:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/26/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/06/2015	RAL
Arsenic	EPA-200.8	U	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	20	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	25000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	7600	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL
Magnesium	EPA-200.8	9600	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	390	2.0	1	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-16
CLIENT SAMPLE ID	FPP-MW-3-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 11:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Sodium	EPA-200.8	15000	50	1	ug/L	01/15/2015	RAL
Arsenic (Dissolved)	EPA-200.8	0.58	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	20	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	25000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	7900	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	9700	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	390	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	15000	50	1	ug/L	01/14/2015	RAL
Ammonia as N	EPA-350.1	0.27	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.4	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	98.5	12/20/2014	EBS
C25	NWTPH-HCID	78.9	12/20/2014	EBS
C25 (conc)	NWTPH-HCID	79.7	12/20/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	102	12/23/2014	GAP
Toluene-d8	EPA-8260	97.3	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	101	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	66.8	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	106	01/06/2015	GAP
2-Fluorophenol	EPA-8270	44.8	01/07/2015	GAP
Phenol-d5	EPA-8270	24.2	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	75.8	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	87.2	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	101	01/07/2015	GAP
Terphenyl-d14	EPA-8270	98.7	01/07/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-17
CLIENT SAMPLE ID	MW-12-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	>310	310	1	ug/L	12/21/2014	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	390	130	1	ug/L	12/26/2014	EBS
TPH-Diesel Range	NWTPH-DX	990	130	1	ug/L	12/29/2014	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	980	250	1	ug/L	12/26/2014	EBS
TPH-Oil Range	NWTPH-DX	1100	250	1	ug/L	12/29/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-17
CLIENT SAMPLE ID	MW-12-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	0.11	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-17
CLIENT SAMPLE ID	MW-12-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	0.017	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	0.015	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-17
CLIENT SAMPLE ID	MW-12-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/26/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/06/2015	RAL
Arsenic	EPA-200.8	U	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	45	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	39000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	10000	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-17
CLIENT SAMPLE ID	MW-12-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Magnesium	EPA-200.8	14000	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	1700	2.0	1	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL
Sodium	EPA-200.8	44000	50	1	ug/L	01/15/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	47	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	40000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	11000	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	14000	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	1700	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	43000	50	1	ug/L	01/14/2015	RAL
Ammonia as N	EPA-350.1	1.4	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	7.0	1.0	2	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	96.5	12/21/2014	EBS
C25	NWTPH-HCID	73.9	12/21/2014	EBS
C25 (conc)	NWTPH-HCID	72.9	12/21/2014	EBS
C25	NWTPH-DX w/ SGA	97.5	12/26/2014	EBS
C25	NWTPH-DX	91.8	12/29/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	105	12/23/2014	GAP
Toluene-d8	EPA-8260	96.2	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	101	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	70.4	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	98.1	01/06/2015	GAP
2-Fluorophenol	EPA-8270	49.0	01/07/2015	GAP
Phenol-d5	EPA-8270	27.1	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	82.7	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	94.3	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	108	01/07/2015	GAP
Terphenyl-d14	EPA-8270	106	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-17
CLIENT SAMPLE ID	MW-12-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 9:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered diesel and lube oil.
Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-18
CLIENT SAMPLE ID	MW-17-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-18
CLIENT SAMPLE ID	MW-17-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	0.010	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-18
CLIENT SAMPLE ID	MW-17-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	0.016	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-18
CLIENT SAMPLE ID	MW-17-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/26/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/06/2015	RAL
Arsenic	EPA-200.8	1.8	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	74	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	46000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	22000	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL
Magnesium	EPA-200.8	16000	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	2300	2.0	1	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-18
CLIENT SAMPLE ID	MW-17-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Sodium	EPA-200.8	27000	50	1	ug/L	01/15/2015	RAL
Arsenic (Dissolved)	EPA-200.8	1.4	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	72	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	43000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	21000	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	15000	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	2100	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	25000	50	1	ug/L	01/14/2015	RAL
Ammonia as N	EPA-350.1	3.0	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.2	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	104	12/21/2014	EBS
C25	NWTPH-HCID	81.7	12/21/2014	EBS
C25 (conc)	NWTPH-HCID	76.0	12/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	104	12/23/2014	GAP
Toluene-d8	EPA-8260	96.6	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	99.3	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	69.2	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	98.0	01/06/2015	GAP
2-Fluorophenol	EPA-8270	51.1	01/07/2015	GAP
Phenol-d5	EPA-8270	28.3	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	84.4	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	96.3	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	112	01/07/2015	GAP
Terphenyl-d14	EPA-8270	105	01/07/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-19
CLIENT SAMPLE ID	MW-14-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 1:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
Mercury	EPA-7470	U	0.11	1	ug/L	12/26/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/07/2015	RAL
Arsenic	EPA-200.8	U	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	5.0	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	13000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	U	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL
Magnesium	EPA-200.8	4800	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	3.8	2.0	1	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL
Sodium	EPA-200.8	5400	50	1	ug/L	01/15/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	4.9	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	13000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	4600	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	2.9	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	5100	50	1	ug/L	01/14/2015	RAL
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	0.72	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	96.3	12/21/2014	EBS
C25	NWTPH-HCID	73.0	12/21/2014	EBS
C25 (conc)	NWTPH-HCID	85.8	12/21/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-20
CLIENT SAMPLE ID	MW-DUP2-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-20
CLIENT SAMPLE ID	MW-DUP2-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	0.0097	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-20
CLIENT SAMPLE ID	MW-DUP2-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	0.014	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-20
CLIENT SAMPLE ID	MW-DUP2-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	12/26/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/07/2015	RAL
Arsenic	EPA-200.8	1.2	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	19	1.0	1	ug/L	01/15/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	24000	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	8000	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL
Magnesium	EPA-200.8	9400	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	410	2.0	1	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-20
CLIENT SAMPLE ID	MW-DUP2-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Sodium	EPA-200.8	15000	50	1	ug/L	01/15/2015	RAL
Arsenic (Dissolved)	EPA-200.8	0.83	0.45	1	ug/L	01/14/2015	RAL
Barium (Dissolved)	EPA-200.8	20	1.0	1	ug/L	01/14/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/14/2015	RAL
Calcium (Dissolved)	EPA-200.8	24000	100	1	ug/L	01/14/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/14/2015	RAL
Iron (Dissolved)	EPA-200.8	8000	50	1	ug/L	01/14/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/14/2015	RAL
Magnesium (Dissolved)	EPA-200.8	9300	50	1	ug/L	01/14/2015	RAL
Manganese (Dissolved)	EPA-200.8	390	2.0	1	ug/L	01/14/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/14/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/14/2015	RAL
Sodium (Dissolved)	EPA-200.8	15000	50	1	ug/L	01/14/2015	RAL
Ammonia as N	EPA-350.1	0.62	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.2	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	125	12/21/2014	EBS
C25	NWTPH-HCID	92.7	12/21/2014	EBS
C25 (conc)	NWTPH-HCID	77.1	12/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	106	12/23/2014	GAP
Toluene-d8	EPA-8260	110	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	87.4	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	66.4	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	98.1	01/06/2015	GAP
2-Fluorophenol	EPA-8270	47.0	01/07/2015	GAP
Phenol-d5	EPA-8270	25.4	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	80.0	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	92.1	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	105	01/07/2015	GAP
Terphenyl-d14	EPA-8270	103	01/07/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-21
CLIENT SAMPLE ID	MW-16-121814	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/18/2014 2:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
Mercury	EPA-7470	U	0.11	1	ug/L	12/26/2014	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/07/2015	RAL
Arsenic	EPA-200.8	0.97	0.45	1	ug/L	01/02/2015	RAL
Barium	EPA-200.8	21	1.0	1	ug/L	01/02/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium	EPA-200.8	42000	100	1	ug/L	01/02/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron	EPA-200.8	190	50	1	ug/L	01/02/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium	EPA-200.8	11000	50	1	ug/L	01/02/2015	RAL
Manganese	EPA-200.8	190	2.0	1	ug/L	01/02/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium	EPA-200.8	20000	50	1	ug/L	01/02/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	01/02/2015	RAL
Barium (Dissolved)	EPA-200.8	19	1.0	1	ug/L	01/02/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium (Dissolved)	EPA-200.8	41000	100	1	ug/L	01/02/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	01/02/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium (Dissolved)	EPA-200.8	11000	50	1	ug/L	01/02/2015	RAL
Manganese (Dissolved)	EPA-200.8	210	2.0	1	ug/L	01/02/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium (Dissolved)	EPA-200.8	20000	50	1	ug/L	01/02/2015	RAL
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	2.0	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	106	12/21/2014	EBS
C25	NWTPH-HCID	80.1	12/21/2014	EBS
C25 (conc)	NWTPH-HCID	84.6	12/21/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-22
CLIENT SAMPLE ID	MW-100-121714	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/17/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	1.2	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-22
CLIENT SAMPLE ID	MW-100-121714	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/17/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-22
CLIENT SAMPLE ID	MW-100-121714	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/17/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-22
CLIENT SAMPLE ID	MW-100-121714	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/17/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	01/02/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/07/2015	RAL
Arsenic	EPA-200.8	0.88	0.45	1	ug/L	01/02/2015	RAL
Barium	EPA-200.8	8.2	1.0	1	ug/L	01/02/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium	EPA-200.8	29000	100	1	ug/L	01/02/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron	EPA-200.8	260	50	1	ug/L	01/02/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium	EPA-200.8	9000	50	1	ug/L	01/02/2015	RAL
Manganese	EPA-200.8	320	2.0	1	ug/L	01/02/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-22
CLIENT SAMPLE ID	MW-100-121714	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/17/2014 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Sodium	EPA-200.8	11000	50	1	ug/L	01/02/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	01/02/2015	RAL
Barium (Dissolved)	EPA-200.8	5.9	1.0	1	ug/L	01/02/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium (Dissolved)	EPA-200.8	28000	100	1	ug/L	01/02/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	01/02/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium (Dissolved)	EPA-200.8	9000	50	1	ug/L	01/02/2015	RAL
Manganese (Dissolved)	EPA-200.8	230	2.0	1	ug/L	01/02/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium (Dissolved)	EPA-200.8	11000	50	1	ug/L	01/02/2015	RAL
Ammonia as N	EPA-350.1	0.056	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.0	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	92.7	12/21/2014	EBS
C25	NWTPH-HCID	72.6	12/21/2014	EBS
C25 (conc)	NWTPH-HCID	80.2	12/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	107	12/23/2014	GAP
Toluene-d8	EPA-8260	95.0	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	100	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	62.7	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	108	01/06/2015	GAP
2-Fluorophenol	EPA-8270	45.0	01/07/2015	GAP
Phenol-d5	EPA-8270	23.9	01/07/2015	GAP
Nitrobenzene-d5	EPA-8270	80.4	01/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	90.0	01/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	93.7	01/07/2015	GAP
Terphenyl-d14	EPA-8270	107	01/07/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-23
CLIENT SAMPLE ID	MW-9A-121714	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/17/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	22	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-23
CLIENT SAMPLE ID	MW-9A-121714	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/17/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	0.0092	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-23
CLIENT SAMPLE ID	MW-9A-121714	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/17/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-23
CLIENT SAMPLE ID	MW-9A-121714	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/17/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/08/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	01/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	01/02/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/07/2015	RAL
Arsenic	EPA-200.8	0.97	0.45	1	ug/L	01/02/2015	RAL
Barium	EPA-200.8	5.1	1.0	1	ug/L	01/02/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium	EPA-200.8	14000	100	1	ug/L	01/02/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron	EPA-200.8	U	50	1	ug/L	01/02/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium	EPA-200.8	4400	50	1	ug/L	01/02/2015	RAL
Manganese	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-23
CLIENT SAMPLE ID:	MW-9A-121714	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/17/2014 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Sodium	EPA-200.8	9000	50	1	ug/L	01/02/2015	RAL
Arsenic (Dissolved)	EPA-200.8	0.67	0.45	1	ug/L	01/02/2015	RAL
Barium (Dissolved)	EPA-200.8	4.9	1.0	1	ug/L	01/02/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium (Dissolved)	EPA-200.8	14000	100	1	ug/L	01/02/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	01/02/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium (Dissolved)	EPA-200.8	4600	50	1	ug/L	01/02/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium (Dissolved)	EPA-200.8	9400	50	1	ug/L	01/02/2015	RAL
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.0	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	102	12/21/2014	EBS
C25	NWTPH-HCID	76.7	12/21/2014	EBS
C25 (conc)	NWTPH-HCID	81.3	12/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	106	12/23/2014	GAP
Toluene-d8	EPA-8260	96.1	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	99.8	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	65.4	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	99.3	01/06/2015	GAP
2-Fluorophenol	EPA-8270	44.4	01/08/2015	GAP
Phenol-d5	EPA-8270	25.1	01/08/2015	GAP
Nitrobenzene-d5	EPA-8270	77.7	01/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	87.6	01/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	101	01/08/2015	GAP
Terphenyl-d14	EPA-8270	104	01/08/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-24
CLIENT SAMPLE ID	MW-107-12/16/2014 14:20	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-24
CLIENT SAMPLE ID	MW-107-12/16/2014 14:20	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	0.060	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-24
CLIENT SAMPLE ID	MW-107-12/16/2014 14:20	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	0.015	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	0.015	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-24
CLIENT SAMPLE ID	MW-107-12/16/2014 14:20	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/08/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	01/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	01/02/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/07/2015	RAL
Arsenic	EPA-200.8	3.4	0.45	1	ug/L	01/02/2015	RAL
Barium	EPA-200.8	60	1.0	1	ug/L	01/02/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium	EPA-200.8	38000	100	1	ug/L	01/02/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron	EPA-200.8	24000	50	1	ug/L	01/02/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium	EPA-200.8	13000	50	1	ug/L	01/02/2015	RAL
Manganese	EPA-200.8	2000	2.0	1	ug/L	01/02/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-24
CLIENT SAMPLE ID	MW-107-12/16/2014 14:20	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 2:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Sodium	EPA-200.8	21000	50	1	ug/L	01/02/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.7	0.45	1	ug/L	01/02/2015	RAL
Barium (Dissolved)	EPA-200.8	56	1.0	1	ug/L	01/02/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium (Dissolved)	EPA-200.8	36000	100	1	ug/L	01/02/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron (Dissolved)	EPA-200.8	22000	50	1	ug/L	01/02/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	ug/L	01/02/2015	RAL
Manganese (Dissolved)	EPA-200.8	1900	2.0	1	ug/L	01/02/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium (Dissolved)	EPA-200.8	20000	50	1	ug/L	01/02/2015	RAL
Ammonia as N	EPA-350.1	3.6	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	3.5	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	85.7	12/21/2014	EBS
C25	NWTPH-HCID	66.2	12/21/2014	EBS
C25 (conc)	NWTPH-HCID	76.4	12/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	107	12/23/2014	GAP
Toluene-d8	EPA-8260	94.8	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	101	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	66.3	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	93.9	01/06/2015	GAP
2-Fluorophenol	EPA-8270	48.0	01/08/2015	GAP
Phenol-d5	EPA-8270	26.5	01/08/2015	GAP
Nitrobenzene-d5	EPA-8270	81.4	01/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	88.5	01/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	105	01/08/2015	GAP
Terphenyl-d14	EPA-8270	97.9	01/08/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-25
CLIENT SAMPLE ID	MW-7-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-25
CLIENT SAMPLE ID	MW-7-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-25
CLIENT SAMPLE ID	MW-7-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	0.011	0.01	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-25
CLIENT SAMPLE ID	MW-7-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/08/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	01/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	01/02/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/07/2015	RAL
Arsenic	EPA-200.8	2.6	0.45	1	ug/L	01/02/2015	RAL
Barium	EPA-200.8	49	1.0	1	ug/L	01/02/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium	EPA-200.8	37000	100	1	ug/L	01/02/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron	EPA-200.8	22000	50	1	ug/L	01/02/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium	EPA-200.8	13000	50	1	ug/L	01/02/2015	RAL
Manganese	EPA-200.8	2000	2.0	1	ug/L	01/02/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-25
CLIENT SAMPLE ID	MW-7-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Sodium	EPA-200.8	19000	50	1	ug/L	01/02/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.8	0.45	1	ug/L	01/02/2015	RAL
Barium (Dissolved)	EPA-200.8	52	1.0	1	ug/L	01/02/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium (Dissolved)	EPA-200.8	37000	100	1	ug/L	01/02/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron (Dissolved)	EPA-200.8	23000	50	1	ug/L	01/02/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	ug/L	01/02/2015	RAL
Manganese (Dissolved)	EPA-200.8	1900	2.0	1	ug/L	01/02/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium (Dissolved)	EPA-200.8	19000	50	1	ug/L	01/02/2015	RAL
Ammonia as N	EPA-350.1	5.0	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.2	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	87.6	12/21/2014	EBS
C25	NWTPH-HCID	67.3	12/21/2014	EBS
C25 (conc)	NWTPH-HCID	76.6	12/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	107	12/23/2014	GAP
Toluene-d8	EPA-8260	95.2	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	98.7	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	59.7	01/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	101	01/06/2015	GAP
2-Fluorophenol	EPA-8270	48.4	01/08/2015	GAP
Phenol-d5	EPA-8270	27.3	01/08/2015	GAP
Nitrobenzene-d5	EPA-8270	82.5	01/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	92.7	01/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	93.0	01/08/2015	GAP
Terphenyl-d14	EPA-8270	104	01/08/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-26
CLIENT SAMPLE ID	MW-104-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 12:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-26
CLIENT SAMPLE ID	MW-104-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 12:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	01/08/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/08/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/08/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/08/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/08/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/08/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-26
CLIENT SAMPLE ID	MW-104-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 12:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/08/2015	GAP
Anthracene	EPA-8270 SIM	0.010	0.01	1	ug/L	01/08/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/08/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	01/08/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/08/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/08/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/08/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/08/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/08/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/08/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/08/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/08/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-26
CLIENT SAMPLE ID	MW-104-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 12:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/08/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	01/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	01/02/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/07/2015	RAL
Arsenic	EPA-200.8	4.8	0.45	1	ug/L	01/02/2015	RAL
Barium	EPA-200.8	56	1.0	1	ug/L	01/02/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium	EPA-200.8	37000	100	1	ug/L	01/02/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron	EPA-200.8	27000	50	1	ug/L	01/02/2015	RAL
Lead	EPA-200.8	1.7	0.28	1	ug/L	01/02/2015	RAL
Magnesium	EPA-200.8	13000	50	1	ug/L	01/02/2015	RAL
Manganese	EPA-200.8	2000	2.0	1	ug/L	01/02/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-26
CLIENT SAMPLE ID	MW-104-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 12:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Sodium	EPA-200.8	18000	50	1	ug/L	01/02/2015	RAL
Arsenic (Dissolved)	EPA-200.8	5.4	0.45	1	ug/L	01/02/2015	RAL
Barium (Dissolved)	EPA-200.8	48	1.0	1	ug/L	01/02/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium (Dissolved)	EPA-200.8	37000	100	1	ug/L	01/02/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron (Dissolved)	EPA-200.8	27000	50	1	ug/L	01/02/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	ug/L	01/02/2015	RAL
Manganese (Dissolved)	EPA-200.8	2100	2.0	1	ug/L	01/02/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium (Dissolved)	EPA-200.8	18000	50	1	ug/L	01/02/2015	RAL
Ammonia as N	EPA-350.1	2.1	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.1	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	103	12/21/2014	EBS
C25	NWTPH-HCID	80.8	12/21/2014	EBS
C25 (conc)	NWTPH-HCID	78.0	12/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	107	12/23/2014	GAP
Toluene-d8	EPA-8260	95.2	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	99.2	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	59.1	01/08/2015	GAP
Terphenyl-d14	EPA-8270 SIM	115	01/08/2015	GAP
2-Fluorophenol	EPA-8270	40.8	01/08/2015	GAP
Phenol-d5	EPA-8270	23.0	01/08/2015	GAP
Nitrobenzene-d5	EPA-8270	70.8	01/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	81.8	01/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	105	01/08/2015	GAP
Terphenyl-d14	EPA-8270	107	01/08/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-27
CLIENT SAMPLE ID	MW-105-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-27
CLIENT SAMPLE ID	MW-105-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	0.082	0.013	1	ug/L	01/08/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/08/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/08/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/08/2015	GAP
Acenaphthene	EPA-8270 SIM	0.16	0.014	1	ug/L	01/08/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	01/08/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-27
CLIENT SAMPLE ID	MW-105-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/08/2015	GAP
Anthracene	EPA-8270 SIM	0.010	0.01	1	ug/L	01/08/2015	GAP
Fluoranthene	EPA-8270 SIM	0.018	0.0092	1	ug/L	01/08/2015	GAP
Pyrene	EPA-8270 SIM	0.015	0.01	1	ug/L	01/08/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/08/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/08/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/08/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/08/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/08/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/08/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/08/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/08/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-27
CLIENT SAMPLE ID	MW-105-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/08/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	01/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	01/02/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/07/2015	RAL
Arsenic	EPA-200.8	3.9	0.45	1	ug/L	01/02/2015	RAL
Barium	EPA-200.8	64	1.0	1	ug/L	01/02/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium	EPA-200.8	38000	100	1	ug/L	01/02/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron	EPA-200.8	31000	50	1	ug/L	01/02/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium	EPA-200.8	12000	50	1	ug/L	01/02/2015	RAL
Manganese	EPA-200.8	2900	2.0	1	ug/L	01/02/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-27
CLIENT SAMPLE ID	MW-105-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Sodium	EPA-200.8	17000	50	1	ug/L	01/02/2015	RAL
Arsenic (Dissolved)	EPA-200.8	4.2	0.45	1	ug/L	01/02/2015	RAL
Barium (Dissolved)	EPA-200.8	62	1.0	1	ug/L	01/02/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium (Dissolved)	EPA-200.8	37000	100	1	ug/L	01/02/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron (Dissolved)	EPA-200.8	30000	50	1	ug/L	01/02/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	ug/L	01/02/2015	RAL
Manganese (Dissolved)	EPA-200.8	2900	2.0	1	ug/L	01/02/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium (Dissolved)	EPA-200.8	16000	50	1	ug/L	01/02/2015	RAL
Ammonia as N	EPA-350.1	1.7	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	5.3	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	101	12/21/2014	EBS
C25	NWTPH-HCID	76.7	12/21/2014	EBS
C25 (conc)	NWTPH-HCID	83.2	12/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	108	12/23/2014	GAP
Toluene-d8	EPA-8260	95.4	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	99.3	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	63.6	01/08/2015	GAP
Terphenyl-d14	EPA-8270 SIM	123	01/08/2015	GAP
2-Fluorophenol	EPA-8270	48.5	01/08/2015	GAP
Phenol-d5	EPA-8270	26.2	01/08/2015	GAP
Nitrobenzene-d5	EPA-8270	85.5	01/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	97.0	01/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	113	01/08/2015	GAP
Terphenyl-d14	EPA-8270	109	01/08/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-28
CLIENT SAMPLE ID	MW-108-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 12:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-28
CLIENT SAMPLE ID	MW-108-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 12:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Naphthalene	EPA-8270 SIM	0.053	0.013	1	ug/L	01/08/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/08/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/08/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	01/08/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	01/08/2015	GAP
Fluorene	EPA-8270 SIM	0.018	0.0090	1	ug/L	01/08/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	01/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-28
CLIENT SAMPLE ID	MW-108-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 12:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	01/08/2015	GAP
Anthracene	EPA-8270 SIM	0.013	0.01	1	ug/L	01/08/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	01/08/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	01/08/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	01/08/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	01/08/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	01/08/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/08/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	01/08/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	01/08/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	01/08/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	01/08/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	01/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	01/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	01/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-28
CLIENT SAMPLE ID	MW-108-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 12:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	01/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	01/08/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	01/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	01/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	01/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	01/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/08/2015	GAP
Mercury	EPA-7470	U	0.11	1	ug/L	01/02/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/07/2015	RAL
Arsenic	EPA-200.8	4.8	0.45	1	ug/L	01/02/2015	RAL
Barium	EPA-200.8	55	1.0	1	ug/L	01/02/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium	EPA-200.8	39000	100	1	ug/L	01/02/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron	EPA-200.8	30000	50	1	ug/L	01/02/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium	EPA-200.8	14000	50	1	ug/L	01/02/2015	RAL
Manganese	EPA-200.8	2100	2.0	1	ug/L	01/02/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-28
CLIENT SAMPLE ID	MW-108-121614	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014 12:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Sodium	EPA-200.8	18000	50	1	ug/L	01/02/2015	RAL
Arsenic (Dissolved)	EPA-200.8	5.1	0.45	1	ug/L	01/02/2015	RAL
Barium (Dissolved)	EPA-200.8	59	1.0	1	ug/L	01/02/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium (Dissolved)	EPA-200.8	40000	100	1	ug/L	01/02/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron (Dissolved)	EPA-200.8	32000	50	1	ug/L	01/02/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium (Dissolved)	EPA-200.8	14000	50	1	ug/L	01/02/2015	RAL
Manganese (Dissolved)	EPA-200.8	2200	2.0	1	ug/L	01/02/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium (Dissolved)	EPA-200.8	18000	50	1	ug/L	01/02/2015	RAL
Ammonia as N	EPA-350.1	2.8	0.050	1	MG/L	01/05/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.7	0.50	1	MG/L	12/30/2014	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	95.7	12/21/2014	EBS
C25	NWTPH-HCID	72.9	12/21/2014	EBS
C25 (conc)	NWTPH-HCID	81.5	12/21/2014	EBS
1,2-Dichloroethane-d4	EPA-8260	106	12/23/2014	GAP
Toluene-d8	EPA-8260	95.7	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	99.7	12/23/2014	GAP
2,4,6-Tribromophenol	EPA-8270 SIM	61.1	01/08/2015	GAP
Terphenyl-d14	EPA-8270 SIM	118	01/08/2015	GAP
2-Fluorophenol	EPA-8270	45.6	01/08/2015	GAP
Phenol-d5	EPA-8270	25.5	01/08/2015	GAP
Nitrobenzene-d5	EPA-8270	82.2	01/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	94.0	01/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	115	01/08/2015	GAP
Terphenyl-d14	EPA-8270	109	01/08/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-29
CLIENT SAMPLE ID	Trip Blanks	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Volatile Range	NWTPH-GX	U	50	1	ug/L	12/22/2014	DLC
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	ALS SAMPLE#:	EV14120162-29
CLIENT SAMPLE ID	Trip Blanks	DATE RECEIVED:	12/20/2014
		COLLECTION DATE:	12/16/2014
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
TFT	NWTPH-GX	82.6	12/22/2014	DLC
1,2-Dichloroethane-d4	EPA-8260	117	12/23/2014	GAP
Toluene-d8	EPA-8260	96.4	12/23/2014	GAP
4-Bromofluorobenzene	EPA-8260	100	12/23/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/26/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB-122014W - Batch 89125 - Water by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-122014W2 - Batch 89154 - Water by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	12/21/2014	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	12/21/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MBG-121614W - Batch 89061 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	ug/L	12/16/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-122614W - Batch 89211 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	130	1	ug/L	12/26/2014	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	ug/L	12/26/2014	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-122214W - Batch 89253 - Water by EPA-8260 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/22/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/22/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/22/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/22/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/26/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB-122214W - Batch 89253 - Water by EPA-8260 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/22/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-122214W2 - Batch 89254 - Water by EPA-8260 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	12/23/2014	GAP
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	12/23/2014	GAP
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	12/23/2014	GAP
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	12/23/2014	GAP
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	12/23/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-122214W - Batch 89253 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/22/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/22/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/22/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/22/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/22/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-122214W - Batch 89253 - Water by EPA-8260

Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/22/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/22/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/22/2014	GAP
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/22/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/22/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/22/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/22/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/22/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/22/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/22/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/22/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/22/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. **DATE:** 1/26/2015
 130 - 2nd Ave. S. **ALS SDG#:** EV14120162
 Edmonds, WA 98020 **WDOE ACCREDITATION:** C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB-122214W2 - Batch 89254 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Chloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Acetone	EPA-8260	U	25	1	ug/L	12/23/2014	GAP
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	12/23/2014	GAP
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	12/23/2014	GAP
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Butanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Hexane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	12/23/2014	GAP
Benzene	EPA-8260	U	0.028	1	ug/L	12/23/2014	GAP
Dibromomethane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	12/23/2014	GAP
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
Toluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Hexanone	EPA-8260	U	10	1	ug/L	12/23/2014	GAP
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	12/23/2014	GAP
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	12/23/2014	GAP
Styrene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
o-Xylene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Bromoform	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/26/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB-122214W2 - Batch 89254 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	12/23/2014	GAP
Bromobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,3 Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	12/23/2014	GAP
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	12/23/2014	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	12/23/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-122014W - Batch 89449 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.012	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.030	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.026	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.042	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.23	1	ug/L	01/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.022	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.0094	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.0094	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0073	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.024	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.016	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/26/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB-122014W - Batch 89449 - Water by EPA-8270 SIM

Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP
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U - Analyte analyzed for but not detected at level above reporting limit.

MB-122214W - Batch 89450 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.012	1	ug/L	01/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	01/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.030	1	ug/L	01/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.026	1	ug/L	01/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.042	1	ug/L	01/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.23	1	ug/L	01/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.022	1	ug/L	01/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.027	1	ug/L	01/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	ug/L	01/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.0094	1	ug/L	01/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.0094	1	ug/L	01/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0073	1	ug/L	01/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.024	1	ug/L	01/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	01/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.016	1	ug/L	01/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.013	1	ug/L	01/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.017	1	ug/L	01/06/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-121914W - Batch 89371 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	12/29/2014	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	12/29/2014	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/26/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB-121914W - Batch 89371 - Water by EPA-8270

2-Methylphenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	12/29/2014	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	ug/L	12/29/2014	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.90	1	ug/L	12/29/2014	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	12/29/2014	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	12/29/2014	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	12/29/2014	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	12/29/2014	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Azobenzene	EPA-8270	U	1.6	1	ug/L	12/29/2014	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP



CERTIFICATE OF ANALYSIS

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 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB-121914W - Batch 89371 - Water by EPA-8270

Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.81	1	ug/L	12/29/2014	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	12/29/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-122214W - Batch 89451 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	01/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	01/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	ug/L	01/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.90	1	ug/L	01/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	01/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	01/07/2015	GAP



CERTIFICATE OF ANALYSIS

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 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB-122214W - Batch 89451 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	01/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	01/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Azobenzene	EPA-8270	U	1.6	1	ug/L	01/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.81	1	ug/L	01/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	01/07/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-12/29/2014 - Batch R248006 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	12/29/2014	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	12/29/2014	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	12/29/2014	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	12/29/2014	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	12/29/2014	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	12/29/2014	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	12/29/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-01/05/2015 - Batch R248001 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/26/2015
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 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB1-01/05/2015 - Batch R248001 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
D-BHC	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	01/05/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	01/05/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12222014 - Batch R247440 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	12/22/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12232014 - Batch R247468 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	12/23/2014	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12202014 - Batch R248064 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	12/20/2014	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	12/20/2014	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	12/20/2014	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	12/20/2014	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	12/20/2014	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/26/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MBLK-122015 - Batch R247635 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.11	1	ug/L	01/02/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12232014 - Batch R248134 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.11	1	ug/L	12/23/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12262014 - Batch R247355 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.11	1	ug/L	12/26/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-12302014 - Batch R248135 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	12/30/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-162015 - Batch R248136 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/06/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-172015 - Batch R248137 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	01/07/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-122314W - Batch 89200 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	0.45	1	ug/L	01/15/2015	RAL
Barium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/26/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB-122314W - Batch 89200 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/15/2015	RAL
Calcium	EPA-200.8	U	100	1	ug/L	01/15/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Iron	EPA-200.8	U	50	1	ug/L	01/15/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/15/2015	RAL
Magnesium	EPA-200.8	U	50	1	ug/L	01/15/2015	RAL
Manganese	EPA-200.8	U	2.0	1	ug/L	01/15/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/15/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/15/2015	RAL
Sodium	EPA-200.8	67	50	1	ug/L	01/15/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-123014W - Batch 89281 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	0.45	1	ug/L	01/02/2015	RAL
Barium	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium	EPA-200.8	U	100	1	ug/L	01/02/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron	EPA-200.8	U	50	1	ug/L	01/02/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium	EPA-200.8	U	50	1	ug/L	01/02/2015	RAL
Manganese	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium	EPA-200.8	U	50	1	ug/L	01/02/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-122914W - Batch 89283 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	12/30/2014	RAL
Barium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	12/30/2014	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	12/30/2014	RAL
Calcium (Dissolved)	EPA-200.8	U	100	1	ug/L	12/30/2014	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	12/30/2014	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	12/30/2014	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	12/30/2014	RAL
Magnesium (Dissolved)	EPA-200.8	U	50	1	ug/L	12/30/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/26/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MB-122914W - Batch 89283 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	12/30/2014	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	12/30/2014	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	12/30/2014	RAL
Sodium (Dissolved)	EPA-200.8	U	50	1	ug/L	12/30/2014	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-123014W - Batch 89282 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	01/02/2015	RAL
Barium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	01/02/2015	RAL
Calcium (Dissolved)	EPA-200.8	U	100	1	ug/L	01/02/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	01/02/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	01/02/2015	RAL
Magnesium (Dissolved)	EPA-200.8	U	50	1	ug/L	01/02/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	01/02/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	01/02/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	01/02/2015	RAL
Sodium (Dissolved)	EPA-200.8	U	50	1	ug/L	01/02/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-248018 - Batch R248018 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	12/30/2014	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	12/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK2-248020 - Batch R248020 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	01/05/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-248020 - Batch R248020 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/26/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY BLANK RESULTS

MBLK-248020 - Batch R248020 - Water by EPA-350.1

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK3-248020 - Batch R248020 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	01/05/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK2-248022 - Batch R248022 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	12/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-248022 - Batch R248022 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	12/30/2014	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/26/2015
 130 - 2nd Ave. S. ALS SDG#: EV14120162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 89061 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	81.8			12/16/2014	DLC
TPH-Volatile Range - BSD	NWTPH-GX	88.3	8		12/16/2014	DLC

ALS Test Batch ID: 89211 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	90.9			12/26/2014	EBS
TPH-Diesel Range - BSD	NWTPH-DX	96.3	6		12/26/2014	EBS

ALS Test Batch ID: 89253 - Water by EPA-8260 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Trichloroethene - BS	EPA-8260 SIM	119			12/22/2014	GAP
Trichloroethene - BSD	EPA-8260 SIM	107	11		12/22/2014	GAP

ALS Test Batch ID: 89254 - Water by EPA-8260 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Trichloroethene - BS	EPA-8260 SIM	125			12/23/2014	GAP
Trichloroethene - BSD	EPA-8260 SIM	122	2		12/23/2014	GAP

ALS Test Batch ID: 89253 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	117			12/22/2014	GAP
1,1-Dichloroethene - BSD	EPA-8260	102	14		12/22/2014	GAP
Benzene - BS	EPA-8260	118			12/22/2014	GAP
Benzene - BSD	EPA-8260	102	15		12/22/2014	GAP
Toluene - BS	EPA-8260	112			12/22/2014	GAP
Toluene - BSD	EPA-8260	103	9		12/22/2014	GAP
Chlorobenzene - BS	EPA-8260	108			12/22/2014	GAP
Chlorobenzene - BSD	EPA-8260	102	5		12/22/2014	GAP

ALS Test Batch ID: 89254 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	110			12/23/2014	GAP
1,1-Dichloroethene - BSD	EPA-8260	109	1		12/23/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8260	119			12/23/2014	GAP
Benzene - BSD	EPA-8260	115	4		12/23/2014	GAP
Toluene - BS	EPA-8260	113			12/23/2014	GAP
Toluene - BSD	EPA-8260	109	4		12/23/2014	GAP
Chlorobenzene - BS	EPA-8260	108			12/23/2014	GAP
Chlorobenzene - BSD	EPA-8260	106	1		12/23/2014	GAP

ALS Test Batch ID: 89371 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	28.6			12/29/2014	GAP
Phenol - BSD	EPA-8270	31.8	11		12/29/2014	GAP
2-Chlorophenol - BS	EPA-8270	83.6			12/29/2014	GAP
2-Chlorophenol - BSD	EPA-8270	90.6	8		12/29/2014	GAP
1,4-Dichlorobenzene - BS	EPA-8270	91.8			12/29/2014	GAP
1,4-Dichlorobenzene - BSD	EPA-8270	102	10		12/29/2014	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	78.8			12/29/2014	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	93.2	17		12/29/2014	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	79.6			12/29/2014	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	86.3	8		12/29/2014	GAP
4-Nitrophenol - BS	EPA-8270	24.1			12/29/2014	GAP
4-Nitrophenol - BSD	EPA-8270	23.0	5		12/29/2014	GAP
2,4-Dinitrotoluene - BS	EPA-8270	77.3			12/29/2014	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	83.7	8		12/29/2014	GAP
Pyrene - BS	EPA-8270	129			12/29/2014	GAP
Pyrene - BSD	EPA-8270	136	5		12/29/2014	GAP

ALS Test Batch ID: 89451 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	32.6			01/07/2015	GAP
Phenol - BSD	EPA-8270	34.3	5		01/07/2015	GAP
2-Chlorophenol - BS	EPA-8270	90.0			01/07/2015	GAP
2-Chlorophenol - BSD	EPA-8270	95.4	6		01/07/2015	GAP
1,4-Dichlorobenzene - BS	EPA-8270	103			01/07/2015	GAP
1,4-Dichlorobenzene - BSD	EPA-8270	101	2		01/07/2015	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	91.0			01/07/2015	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	83.4	9		01/07/2015	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	88.3			01/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
4-Chloro-3-Methylphenol - BSD	EPA-8270	91.1	3		01/07/2015	GAP
4-Nitrophenol - BS	EPA-8270	24.3			01/07/2015	GAP
4-Nitrophenol - BSD	EPA-8270	27.1	11		01/07/2015	GAP
2,4-Dinitrotoluene - BS	EPA-8270	86.7			01/07/2015	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	83.1	4		01/07/2015	GAP
Pyrene - BS	EPA-8270	125			01/07/2015	GAP
Pyrene - BSD	EPA-8270	117	6		01/07/2015	GAP

SQ3 - Spike outside of control limits due to sporadic marginal failure. All other spikes in extraction fraction within control limits. No corrective action taken.

ALS Test Batch ID: R248006 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	87.0			12/29/2014	CAS
PCB-1016 - BSD	EPA-8082	85.0	2		12/29/2014	CAS
PCB-1260 - BS	EPA-8082	100			12/29/2014	CAS
PCB-1260 - BSD	EPA-8082	102	1		12/29/2014	CAS

ALS Test Batch ID: R248001 - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	80.0			01/05/2015	CAS
A-BHC - BSD	EPA-8081	79.0	1		01/05/2015	CAS
G-BHC - BS	EPA-8081	80.5			01/05/2015	CAS
G-BHC - BSD	EPA-8081	79.5	1		01/05/2015	CAS
B-BHC - BS	EPA-8081	76.5			01/05/2015	CAS
B-BHC - BSD	EPA-8081	75.5	1		01/05/2015	CAS
Heptachlor - BS	EPA-8081	75.0			01/05/2015	CAS
Heptachlor - BSD	EPA-8081	73.0	3		01/05/2015	CAS
D-BHC - BS	EPA-8081	85.0			01/05/2015	CAS
D-BHC - BSD	EPA-8081	83.0	2		01/05/2015	CAS
Aldrin - BS	EPA-8081	68.0			01/05/2015	CAS
Aldrin - BSD	EPA-8081	67.0	1		01/05/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	75.0			01/05/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	74.0	1		01/05/2015	CAS
Chlordane - BS	EPA-8081	72.5			01/05/2015	CAS
Chlordane - BSD	EPA-8081	72.0	1		01/05/2015	CAS
Endosulfan I - BS	EPA-8081	64.5			01/05/2015	CAS
Endosulfan I - BSD	EPA-8081	63.5	2		01/05/2015	CAS
4,4'-DDE - BS	EPA-8081	73.5			01/05/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
4,4'-DDE - BSD	EPA-8081	73.5	0		01/05/2015	CAS
Dieldrin - BS	EPA-8081	76.5			01/05/2015	CAS
Dieldrin - BSD	EPA-8081	75.5	1		01/05/2015	CAS
Endrin - BS	EPA-8081	80.5			01/05/2015	CAS
Endrin - BSD	EPA-8081	79.0	2		01/05/2015	CAS
4,4'-DDD - BS	EPA-8081	77.0			01/05/2015	CAS
4,4'-DDD - BSD	EPA-8081	76.0	1		01/05/2015	CAS
Endosulfan II - BS	EPA-8081	71.5			01/05/2015	CAS
Endosulfan II - BSD	EPA-8081	70.0	2		01/05/2015	CAS
4,4'-DDT - BS	EPA-8081	79.5			01/05/2015	CAS
4,4'-DDT - BSD	EPA-8081	77.0	3		01/05/2015	CAS
Endrin Aldehyde - BS	EPA-8081	79.0			01/05/2015	CAS
Endrin Aldehyde - BSD	EPA-8081	78.5	1		01/05/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	82.5			01/05/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	80.5	2		01/05/2015	CAS
Methoxychlor - BS	EPA-8081	82.0			01/05/2015	CAS
Methoxychlor - BSD	EPA-8081	79.5	3		01/05/2015	CAS
Hexachlorobenzene - BS	EPA-8081	61.5			01/05/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	60.5	2		01/05/2015	CAS
Toxaphene - BS	EPA-8081	99.9			01/05/2015	CAS
Toxaphene - BSD	EPA-8081	93.4	7		01/05/2015	CAS

ALS Test Batch ID: R247440 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	97.0			12/22/2014	DLC

ALS Test Batch ID: R247468 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	105			12/23/2014	DLC

ALS Test Batch ID: R248064 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	95.0			12/20/2014	GAP
Chloride - BSD	EPA-300.0	95.5	1		12/20/2014	GAP
Fluoride - BS	EPA-300.0	94.5			12/20/2014	GAP
Fluoride - BSD	EPA-300.0	99.0	5		12/20/2014	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
 130 - 2nd Ave. S.
 Edmonds, WA 98020
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.020.023

DATE: 1/26/2015
ALS SDG#: EV14120162
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Nitrate as N - BS	EPA-300.0	108			12/20/2014	GAP
Nitrate as N - BSD	EPA-300.0	108	0		12/20/2014	GAP
Nitrite as N - BS	EPA-300.0	92.0			12/20/2014	GAP
Nitrite as N - BSD	EPA-300.0	93.5	2		12/20/2014	GAP
Sulfate - BS	EPA-300.0	115			12/20/2014	GAP
Sulfate - BSD	EPA-300.0	102	12		12/20/2014	GAP

ALS Test Batch ID: R247355 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	99.0			12/26/2014	RAL
Mercury - BSD	EPA-7470	98.0	1		12/26/2014	RAL

ALS Test Batch ID: R247635 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	98.0			01/02/2015	RAL
Mercury - BSD	EPA-7470	98.0	0		01/02/2015	RAL

ALS Test Batch ID: R248134 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	96.0			12/23/2014	RAL
Mercury - BSD	EPA-7470	95.0	1		12/23/2014	RAL

ALS Test Batch ID: R248135 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	101			12/30/2014	RAL
Mercury (Dissolved) - BSD	EPA-7470	102	1		12/30/2014	RAL

ALS Test Batch ID: R248136 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	94.0			01/06/2015	RAL
Mercury (Dissolved) - BSD	EPA-7470	100	6		01/06/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. **DATE:** 1/26/2015
 130 - 2nd Ave. S. **ALS SDG#:** EV14120162
 Edmonds, WA 98020 **WDOE ACCREDITATION:** C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R248137 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	103			01/07/2015	RAL
Mercury (Dissolved) - BSD	EPA-7470	103	0		01/07/2015	RAL

ALS Test Batch ID: 89200 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	110			01/15/2015	RAL
Arsenic - BSD	EPA-200.8	115	5		01/15/2015	RAL
Barium - BS	EPA-200.8	110			01/15/2015	RAL
Barium - BSD	EPA-200.8	113	3		01/15/2015	RAL
Cadmium - BS	EPA-200.8	109			01/15/2015	RAL
Cadmium - BSD	EPA-200.8	113	4		01/15/2015	RAL
Calcium - BS	EPA-200.8	108			01/15/2015	RAL
Calcium - BSD	EPA-200.8	112	3		01/15/2015	RAL
Chromium - BS	EPA-200.8	105			01/15/2015	RAL
Chromium - BSD	EPA-200.8	111	5		01/15/2015	RAL
Iron - BS	EPA-200.8	107			01/15/2015	RAL
Iron - BSD	EPA-200.8	112	4		01/15/2015	RAL
Lead - BS	EPA-200.8	110			01/15/2015	RAL
Lead - BSD	EPA-200.8	113	2		01/15/2015	RAL
Magnesium - BS	EPA-200.8	101			01/15/2015	RAL
Magnesium - BSD	EPA-200.8	106	5		01/15/2015	RAL
Manganese - BS	EPA-200.8	107			01/15/2015	RAL
Manganese - BSD	EPA-200.8	112	4		01/15/2015	RAL
Selenium - BS	EPA-200.8	112			01/15/2015	RAL
Selenium - BSD	EPA-200.8	115	3		01/15/2015	RAL
Silver - BS	EPA-200.8	113			01/15/2015	RAL
Silver - BSD	EPA-200.8	116	3		01/15/2015	RAL
Sodium - BS	EPA-200.8	101			01/15/2015	RAL
Sodium - BSD	EPA-200.8	104	4		01/15/2015	RAL

ALS Test Batch ID: 89281 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	98.4			01/02/2015	RAL
Arsenic - BSD	EPA-200.8	98.9	1		01/02/2015	RAL
Barium - BS	EPA-200.8	99.5			01/02/2015	RAL
Barium - BSD	EPA-200.8	99.8	0		01/02/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Cadmium - BS	EPA-200.8	98.6			01/02/2015	RAL
Cadmium - BSD	EPA-200.8	99.8	1		01/02/2015	RAL
Calcium - BS	EPA-200.8	94.8			01/02/2015	RAL
Calcium - BSD	EPA-200.8	94.6	0		01/02/2015	RAL
Chromium - BS	EPA-200.8	96.2			01/02/2015	RAL
Chromium - BSD	EPA-200.8	96.5	0		01/02/2015	RAL
Iron - BS	EPA-200.8	96.1			01/02/2015	RAL
Iron - BSD	EPA-200.8	95.7	0		01/02/2015	RAL
Lead - BS	EPA-200.8	96.9			01/02/2015	RAL
Lead - BSD	EPA-200.8	97.4	1		01/02/2015	RAL
Magnesium - BS	EPA-200.8	94.3			01/02/2015	RAL
Magnesium - BSD	EPA-200.8	95.0	1		01/02/2015	RAL
Manganese - BS	EPA-200.8	95.3			01/02/2015	RAL
Manganese - BSD	EPA-200.8	95.5	0		01/02/2015	RAL
Selenium - BS	EPA-200.8	97.4			01/02/2015	RAL
Selenium - BSD	EPA-200.8	98.4	1		01/02/2015	RAL
Silver - BS	EPA-200.8	102			01/02/2015	RAL
Silver - BSD	EPA-200.8	101	1		01/02/2015	RAL
Sodium - BS	EPA-200.8	93.3			01/02/2015	RAL
Sodium - BSD	EPA-200.8	93.6	0		01/02/2015	RAL

ALS Test Batch ID: 89282 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	98.4			01/02/2015	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	98.9	1		01/02/2015	RAL
Barium (Dissolved) - BS	EPA-200.8	99.5			01/02/2015	RAL
Barium (Dissolved) - BSD	EPA-200.8	99.8	0		01/02/2015	RAL
Cadmium (Dissolved) - BS	EPA-200.8	98.6			01/02/2015	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	99.8	1		01/02/2015	RAL
Calcium (Dissolved) - BS	EPA-200.8	94.8			01/02/2015	RAL
Calcium (Dissolved) - BSD	EPA-200.8	94.6	0		01/02/2015	RAL
Chromium (Dissolved) - BS	EPA-200.8	96.2			01/02/2015	RAL
Chromium (Dissolved) - BSD	EPA-200.8	96.5	0		01/02/2015	RAL
Iron (Dissolved) - BS	EPA-200.8	96.1			01/02/2015	RAL
Iron (Dissolved) - BSD	EPA-200.8	95.7	0		01/02/2015	RAL
Lead (Dissolved) - BS	EPA-200.8	96.9			01/02/2015	RAL
Lead (Dissolved) - BSD	EPA-200.8	97.4	1		01/02/2015	RAL
Magnesium (Dissolved) - BS	EPA-200.8	94.3			01/02/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 1/26/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV14120162
CLIENT PROJECT:	Yakima Landfill / #1148008.020.023	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Magnesium (Dissolved) - BSD	EPA-200.8	95.0	1		01/02/2015	RAL
Manganese (Dissolved) - BS	EPA-200.8	95.3			01/02/2015	RAL
Manganese (Dissolved) - BSD	EPA-200.8	95.5	0		01/02/2015	RAL
Selenium (Dissolved) - BS	EPA-200.8	97.4			01/02/2015	RAL
Selenium (Dissolved) - BSD	EPA-200.8	98.4	1		01/02/2015	RAL
Silver (Dissolved) - BS	EPA-200.8	102			01/02/2015	RAL
Silver (Dissolved) - BSD	EPA-200.8	101	1		01/02/2015	RAL
Sodium (Dissolved) - BS	EPA-200.8	93.3			01/02/2015	RAL
Sodium (Dissolved) - BSD	EPA-200.8	93.6	0		01/02/2015	RAL

ALS Test Batch ID: 89283 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	103			12/30/2014	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	104	1		12/30/2014	RAL
Barium (Dissolved) - BS	EPA-200.8	100			12/30/2014	RAL
Barium (Dissolved) - BSD	EPA-200.8	104	3		12/30/2014	RAL
Cadmium (Dissolved) - BS	EPA-200.8	102			12/30/2014	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	104	3		12/30/2014	RAL
Calcium (Dissolved) - BS	EPA-200.8	99.2			12/30/2014	RAL
Calcium (Dissolved) - BSD	EPA-200.8	103	3		12/30/2014	RAL
Chromium (Dissolved) - BS	EPA-200.8	101			12/30/2014	RAL
Chromium (Dissolved) - BSD	EPA-200.8	103	1		12/30/2014	RAL
Iron (Dissolved) - BS	EPA-200.8	102			12/30/2014	RAL
Iron (Dissolved) - BSD	EPA-200.8	103	1		12/30/2014	RAL
Lead (Dissolved) - BS	EPA-200.8	103			12/30/2014	RAL
Lead (Dissolved) - BSD	EPA-200.8	103	0		12/30/2014	RAL
Magnesium (Dissolved) - BS	EPA-200.8	98.3			12/30/2014	RAL
Magnesium (Dissolved) - BSD	EPA-200.8	102	3		12/30/2014	RAL
Manganese (Dissolved) - BS	EPA-200.8	101			12/30/2014	RAL
Manganese (Dissolved) - BSD	EPA-200.8	103	2		12/30/2014	RAL
Selenium (Dissolved) - BS	EPA-200.8	102			12/30/2014	RAL
Selenium (Dissolved) - BSD	EPA-200.8	103	1		12/30/2014	RAL
Silver (Dissolved) - BS	EPA-200.8	104			12/30/2014	RAL
Silver (Dissolved) - BSD	EPA-200.8	106	2		12/30/2014	RAL
Sodium (Dissolved) - BS	EPA-200.8	96.9			12/30/2014	RAL
Sodium (Dissolved) - BSD	EPA-200.8	100	3		12/30/2014	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 1/26/2015
130 - 2nd Ave. S. ALS SDG#: EV14120162
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.020.023

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R248018 - Water by SM2320B

Table with 7 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Row 1: Alkalinity as CaCO3, Total - BS, SM2320B, 109, RPD, QUAL, 12/30/2014, CAS

ALS Test Batch ID: R248020 - Water by EPA-350.1

Table with 7 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows: Ammonia as N - BS (EPA-350.1, 107), Ammonia as N - BS (EPA-350.1, 111), Ammonia as N - BS (EPA-350.1, 105)

ALS Test Batch ID: R248022 - Water by SM5310C

Table with 7 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows: Total Organic Carbon (TOC) - BS (SM5310C, 96.7), Total Organic Carbon (TOC) - BS (SM5310C, 96.7)

APPROVED BY

Handwritten signature of Paul Bagum

Laboratory Director

EV14/20162

Date 12/19/14
 Page 1 of 4

Chain-of-Custody Record

Project Name Yakima Landfill Project No. 1149008.020.270
 Project Location/Event Old Yakima Landfill Quarterly Sampling
 Sampler's Name Stephanie Renando / Shane Kostka
 Project Contact Jeffrey Fellows
 Send Results To S. Fellows, A. Halvorsen

Sample I.D.	Date	Time	Matrix	No. of Containers	Conventional TDS	Alkalinity	Carbonate	Chloride	Perchlorate	TCB's	Ammonia	TPH-HCD	TPH-Dx	TPH-G	TPH-3	VOC's	Observations/Comments
1 MW-109-121914	12/19/14	0850	AC3	14	X	X	X	X	X	X	X	X	X	X	X	X	Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated Added dx w/wo SG+ to # 3, 10, 12 Std MAT. sm
2 MW-18-121914	12/19/14	1221		14	X	X	X	X	X	X	X	X	X	X	X	X	
3 TP-MW-2-121914	12/19/14	1150		8	X	X	X	X	X	X	X	X	X	X	X	X	
4 TP-MW-1-121914	12/19/14	1040		8	X	X	X	X	X	X	X	X	X	X	X	X	
5 MW-102-121914	12/19/14	1555		14	X	X	X	X	X	X	X	X	X	X	X	X	
6 MW-103-121914	12/19/14	1435		14	X	X	X	X	X	X	X	X	X	X	X	X	
7 MW-6-121914	12/19/14	1331		8	X	X	X	X	X	X	X	X	X	X	X	X	
8 FPP-MW-1-121914	12/19/14	1440		8	X	X	X	X	X	X	X	X	X	X	X	X	
9 MW-11-121914	12/19/14	1121		14	X	X	X	X	X	X	X	X	X	X	X	X	
10 MW-106-121914	12/19/14	0925		14	X	X	X	X	X	X	X	X	X	X	X	X	
11 MW-8-121914	12/19/14	0835		14	X	X	X	X	X	X	X	X	X	X	X	X	
12 MW-Dup1-121914	12/19/14	0901		14	X	X	X	X	X	X	X	X	X	X	X	X	
13 MW-101-121814	12/18/14	0850		11	X	X	X	X	X	X	X	X	X	X	X	X	
14 FPP-MW-2-121814	12/18/14	1130		7	X	X	X	X	X	X	X	X	X	X	X	X	
15 MW-15-121814	12/18/14	1350		11	X	X	X	X	X	X	X	X	X	X	X	X	
16 FPP-MW-3-121814	12/18/14	1101		11	X	X	X	X	X	X	X	X	X	X	X	X	
17 MW-12-121814	12/18/14	0925		11	X	X	X	X	X	X	X	X	X	X	X	X	
18 MW-17-121814	12/18/14	1505		11	X	X	X	X	X	X	X	X	X	X	X	X	

Special Shipment/Handling or Storage Requirements: 12/22/14 - Stephanie cancelled VOC for MW-6 (Sample #2) for shipment

Relinquished by	Received by
Signature: <u>Stephanie Renando</u> Printed Name: <u>Stephanie Renando</u> Company: <u>Landau Associates</u> Date: <u>12/20/14</u> Time: <u>0715</u>	Signature: <u>Shawn Roben</u> Printed Name: <u>Shawn Roben</u> Company: <u>AS</u> Date: <u>12/20/14</u> Time: <u>0715</u>

Relinquished by: Stephanie Renando Received by: Shawn Roben
 Signature: _____ Signature: _____
 Printed Name: _____ Printed Name: _____
 Company: _____ Company: _____
 Date: _____ Date: _____

Method of Shipment: On ice

- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080



Chain-of-Custody Record

EV14120162

Date 12/19/14
Page 2 of 4

Project Name Yakima Landfill Project No. 1148008.020.230

Project Location/Event Old Yakima Landfill Quarterly Sampling

Sampler's Name Stephanie Renardo / Shane Kostka

Project Contact Jeffrey Fellows

Send Results To S. Fellows, A. Halvorsen

Sample I.D.	Date	Time	Matrix	No. of Containers	Mercury (Total)	Metals (Total)	Metals (Dissolved)	Metals (Total)	Testing Parameters	Observations/Comments
1	MW-101-121914	12/19/14	AG	14	X	X	X	X		
2	MW-18-121914	12/19/14		14	X	X	X	X		
3	TP-MW-2-121914	12/19/14		8	X	X	X	X		
4	TP-MW-1-121914	12/19/14		8	X	X	X	X		
5	MW-102-121914	12/19/14		14	X	X	X	X		
6	MW-103-121914	12/19/14		14	X	X	X	X		
7	MW-6-121914	12/19/14		8	X	X	X	X		
8	FPP-MW-1-121914	12/19/14		8	X	X	X	X		
9	MW-11-121914	12/19/14		14	X	X	X	X		
10	MW-106-121914	12/19/14		14	X	X	X	X		
11	MW-8-121914	12/19/14		14	X	X	X	X		
12	MW-Dup-121914	12/19/14		14	X	X	X	X		
13	MW-101-121814	12/18/14		14	X	X	X	X		
14	FPP-MW-2-121814	12/18/14		11	X	X	X	X		
15	MW-15-121814	12/18/14		11	X	X	X	X		
16	FPP-MW-3-121814	12/18/14		11	X	X	X	X		
17	MW-12-121814	12/18/14		11	X	X	X	X		
18	MW-17-121814	12/18/14		11	X	X	X	X		

Turnaround Time Standard Accelerated

Observations/Comments:
 X Allow water samples to settle, collect aliquot from clear portion
 X NWTPH-Dx - run acid wash/silica gel cleanup
 run samples standardized to _____ product
 Analyze for EPH if no specific product identified
 VOC/BTEX/VPH (soil):
 non-preserved _____
 preserved w/methanol _____
 preserved w/sodium bisulfate _____
 Freeze upon receipt _____
 Dissolved metal water samples field filtered
 Other: 3-Metals (T/D) = Pb, As, Ba, Ca, Cd, Cr, Fe, Pb, Mg, Mn, Na, Se, Ag, Note: 3 samples for dissolved analytes are field filtered.

Method of Shipment: ON ICE

Relinquished by	Received by
Signature: <u>[Signature]</u> Printed Name: <u>Stephanie Renardo</u> Company: <u>Landau Associates</u> Date: <u>12/20/14</u> Time: <u>0715</u>	Signature: <u>[Signature]</u> Printed Name: <u>Shawn Robinson</u> Company: <u>ALS</u> Date: <u>12/20/14</u> Time: <u>0715</u>



EV14120162

Date 12/19/14
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Chain-of-Custody Record

Project Name Yakima Landfill II Project No. 1146008-020-236
 Project Location/Event Old Yakima Landfill / Quarterly Sampling
 Sampler's Name Stephanie Renando / Shane Kostka
 Project Contact Jeffrey Fellows
 Send Results To Fellows, A. Habrson

Sample I.D.	Date	Time	Matrix	No. of Containers	Conventional/TDS	Alkalinity	Bicarbonate	Dissolved Phosphates	PCB's	Amonia/TOCS	TPH-HCD	TPH-Dx	TPH-5	FAH's	SVOC's	VOC's	Observations/Comments
19 MW-14-121814	12/18/14	1345	AG	7	X	X	X	X	X	X	X	X	X	X	X	X	
20 MW-DUP2-121814	12/18/14	0901		11	X	X	X	X	X	X	X	X	X	X	X	X	
21 MW-16-121814	12/18/14	1450		7	X	X	X	X	X	X	X	X	X	X	X	X	
22 MW-190-121714	12/17/14	0900		11	X	X	X	X	X	X	X	X	X	X	X	X	
23 MW-94-121714	12/17/14	0901		11	X	X	X	X	X	X	X	X	X	X	X	X	
24 MW-107-121614	12/16/14	1420		11	X	X	X	X	X	X	X	X	X	X	X	X	
25 MW-7-121614	12/16/14	1430		11	X	X	X	X	X	X	X	X	X	X	X	X	
26 MW-104-121614	12/16/14	1200		11	X	X	X	X	X	X	X	X	X	X	X	X	
27 MW-105-121614	12/16/14	1030		11	X	X	X	X	X	X	X	X	X	X	X	X	
28 MW-108-121614	12/16/14	1221		11	X	X	X	X	X	X	X	X	X	X	X	X	
29 Trip Blanks				13													

Turnaround Time Standard Accelerated
 Observations/Comments: run samples standardized to product
Analyze for EPH if no specific product identified
VOC/BTEX/VPH (soil):
non-preserved
preserved w/methanol
preserved w/sodium bisulfate
Freeze upon receipt
Dissolved metal water samples field filtered
Other: Fluoride, Nitrate, Nitrite, Chloride, Sulfate, 2-Ron w/ AND without silica gel cleanup.
O=Hold reading. H=ID results
NMA = Sent via Fed Ex

Special Shipment/Handling or Storage Requirements: _____
 Method of Shipment: ON ICE

Relinquished by	Received by
Signature: <u>[Signature]</u> Printed Name: <u>Stephanie Renando</u> Company: <u>Landau Associates</u> Date: <u>12/20/14</u> Time: <u>0715</u>	Signature: <u>[Signature]</u> Printed Name: <u>Shane Robinson</u> Company: <u>AS</u> Date: <u>12/20/14</u> Time: <u>0715</u>



EV14120162

Date 12/19/14
Page 4 of 4

Chain-of-Custody Record

Project Name Yakima Landfill Project No. 11480008.020.023
 Project Location/Event Old Yakima Landfill/Quarterly Sampling
 Sampler's Name Stephanie Renando/Shane Kostka
 Project Contact Jeffrey Fellows
 Send Results To So Fellows, A. Halvorsen

Sample I.D.	Date	Time	Matrix	No. of Containers	Mercury (Total)	Mercury (Dissolved)	Metals (Total)	Metals (Dissolved)	Testing Parameters	Observations/Comments
19 MW-14-121814	12/18/14	1345	AQ	7	X	X	X	X		
20 MW-DVP2-121814	12/18/14	0901		11	X	X	X	X		
21 MW-16-121814	12/18/14	1450		7	X	X	X	X		
22 MW-100-121714	12/17/14	0900		11	X	X	X	X		
23 MW-9A-121714	12/17/14	0901		11	X	X	X	X		
24 MW-107-121614	12/16/14	1420		11	X	X	X	X		
25 MW-7-121614	12/16/14	1430		11	X	X	X	X		
26 MW-104-121614	12/16/14	1200		11	X	X	X	X		
27 MW-105-121614	12/16/14	1030		11	X	X	X	X		
28 MW-108-121614	12/16/14	122j		11	X	X	X	X		

Turnaround Time
 Standard
 Accelerated

Observations/Comments:
 X. Allow water samples to settle, collect aliquot from clear portion
 X. NWTPH-Dx - run acid wash/silica gel cleanup
 ___ run samples standardized to ___ product
 ___ Analyze for EPH if no specific product identified
 VOC/BTEX/VPH (soil):
 ___ non-preserved
 ___ preserved w/methanol
 ___ preserved w/sodium bisulfate
 ___ Freeze upon receipt
 ___ Dissolved metal water samples field filtered
 Other Zn, Mn, Ni, Pb, Cu, Cr, Fe, Pb, Mg, Na, Na, Se, Ag
Water samples are dissolved samples are field filtered

Special Shipment/Handling or Storage Requirements: _____
 Method of Shipment: On ice

Relinquished by	Received by
Signature <u>[Signature]</u> Printed Name <u>Stephanie Renando</u> Company <u>Landau Associates</u> Date <u>12/19/14</u> Time <u>0715</u>	Signature <u>[Signature]</u> Printed Name <u>Shawn Robinson</u> Company <u>ALS</u> Date <u>12/20/14</u> Time <u>0715</u>

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV14120162

Project: Yakima Landfill / #1148008.020.230 023

Received Date: 12/20/14 Received Time: 7:15 am By: SM/RB

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals on outside of sample?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, how many? _____ Where? _____			
Custody seal date: _____ Seal name: _____			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: None
5.8°C, 3.9°C, 1.8°C, 7.3°C,

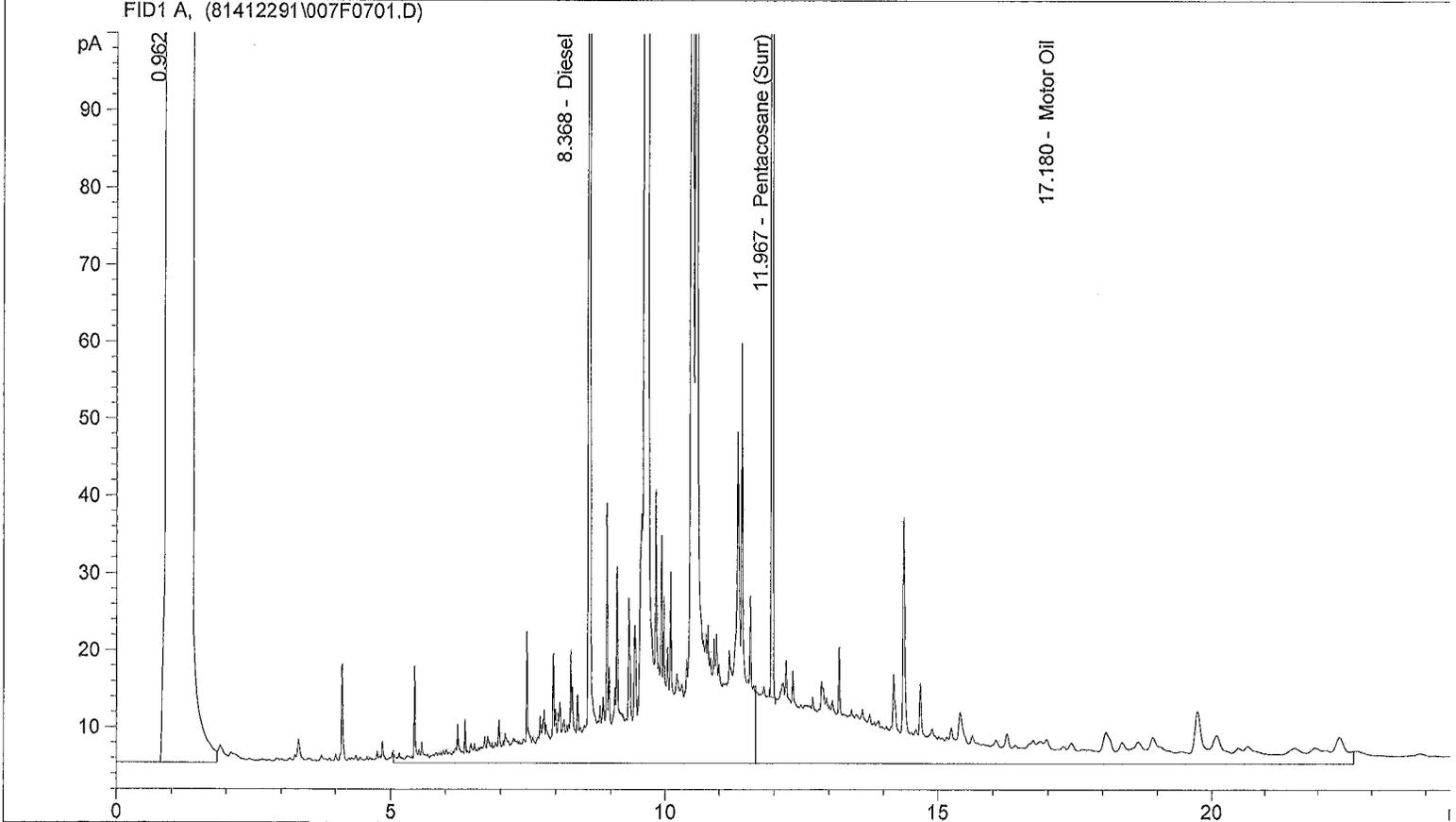
Temperature of cooler upon receipt: 3.4°C, 4.6°C, 4.9°C, 4.1°C (Cold) Cool Ambient N/A
4.6°C, 3.5°C all on ice

Explain any discrepancies: Sample TP-MW-2, TP MW-1, MW-6, FPP MW-1, FPP MW-2, MW-14, MW-16 all missing 1-liter amber jar.

Was client contacted? yes Who was called? Stephanie By whom? Rick Date: 12/20/14

Outcome of call: Skip HClO on FPP 1 + FPP 2
Skip ~~the follow up~~ on TP MW-2, TP MW-1, MW-6, MW-14 + MW-16
PAH/SVOC Hold these for DX Follow up

Sample Name: EV14120162-03 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	8563.502	739.351
11.967		Pentacosane (Surr)	1055.990	43.489
17.180		Motor Oil	2419.405	222.799

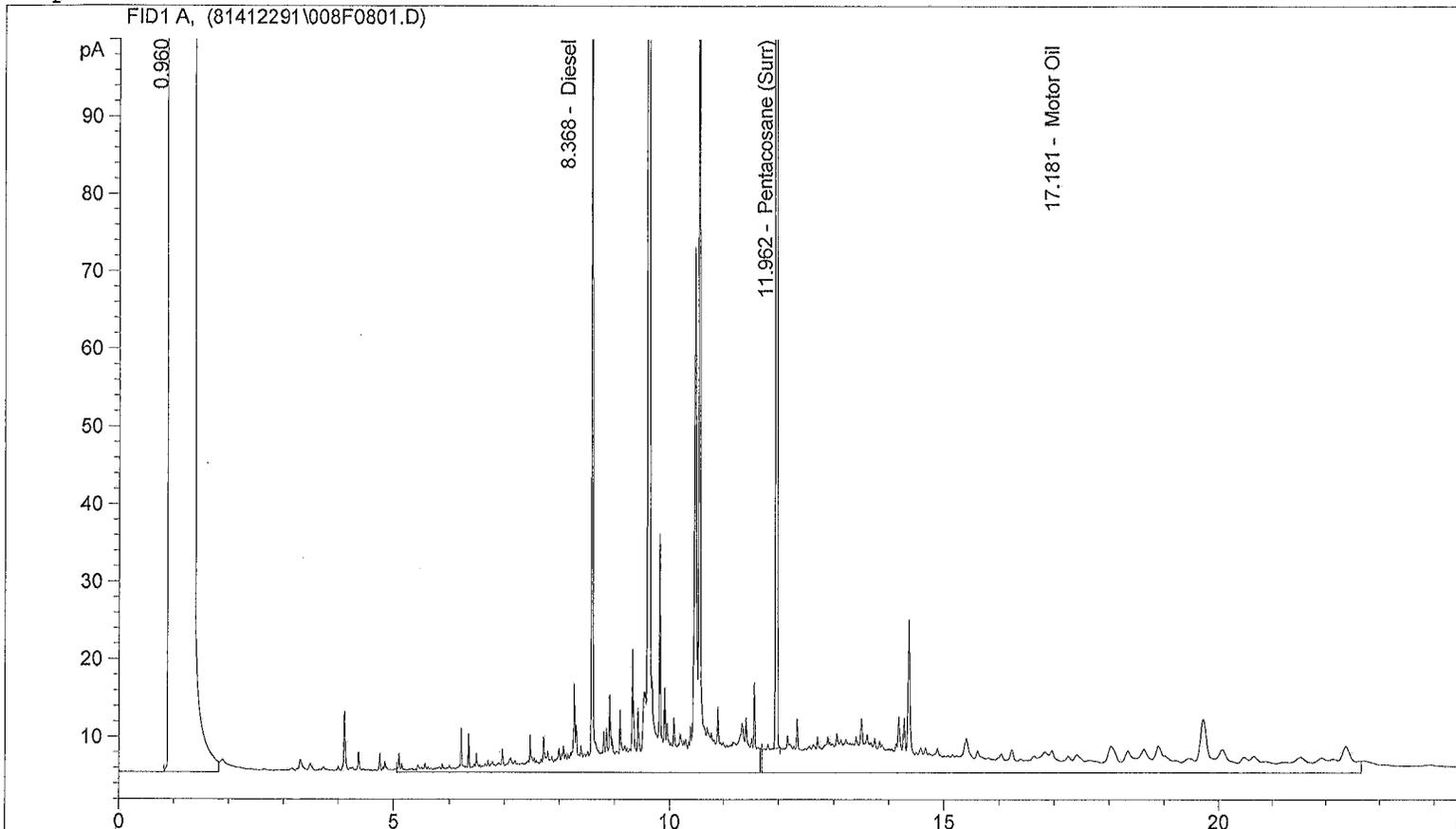
$D = 739.351 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 1500 \text{ ug/L}$ Unidentified Diesel Range Product

$O = 222.799 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 450 \text{ ug/L}$ Unidentified Oil Range Product

RC BY *MS*
 1/9/15

12.29.14ES

Sample Name: EV14120162-03 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	2708.286	233.827
11.962		Pentacosane (Surr)	1171.272	48.237
17.181		Motor Oil	1612.582	148.500

1217.

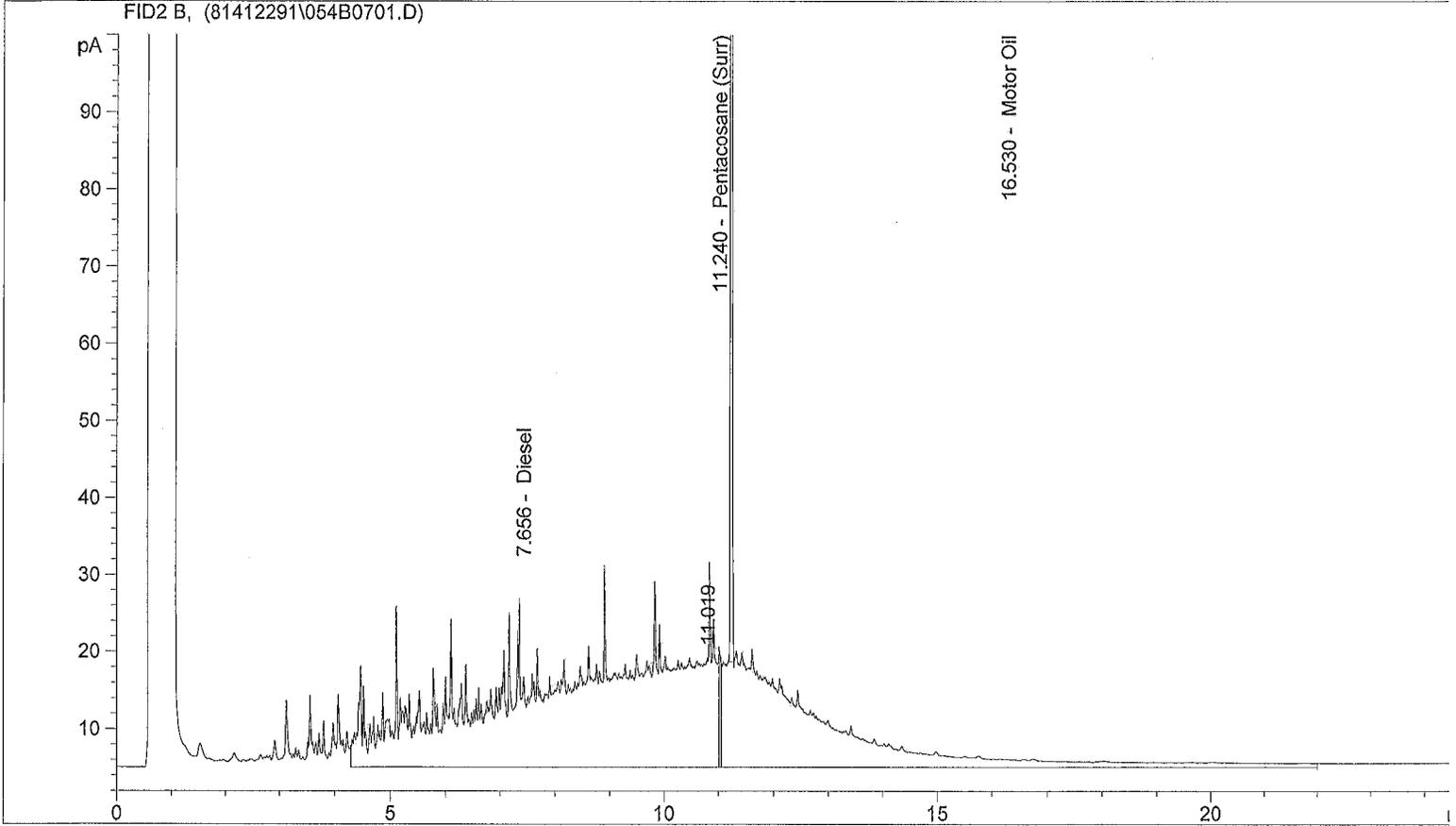
$D = 233.827 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 470 \text{ ug/L}$ Unidentified Diesel Range Product

$O = 148.500 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 300 \text{ ug/L}$ Unidentified Oil Range Product

RE BY NB
 1/9/5

12-29-14es

Sample Name: EV14120162-10 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	3884.913	330.507
11.240		Pentacosane (Surr)	1112.772	39.742
16.530		Motor Oil	1887.142	149.244

99%

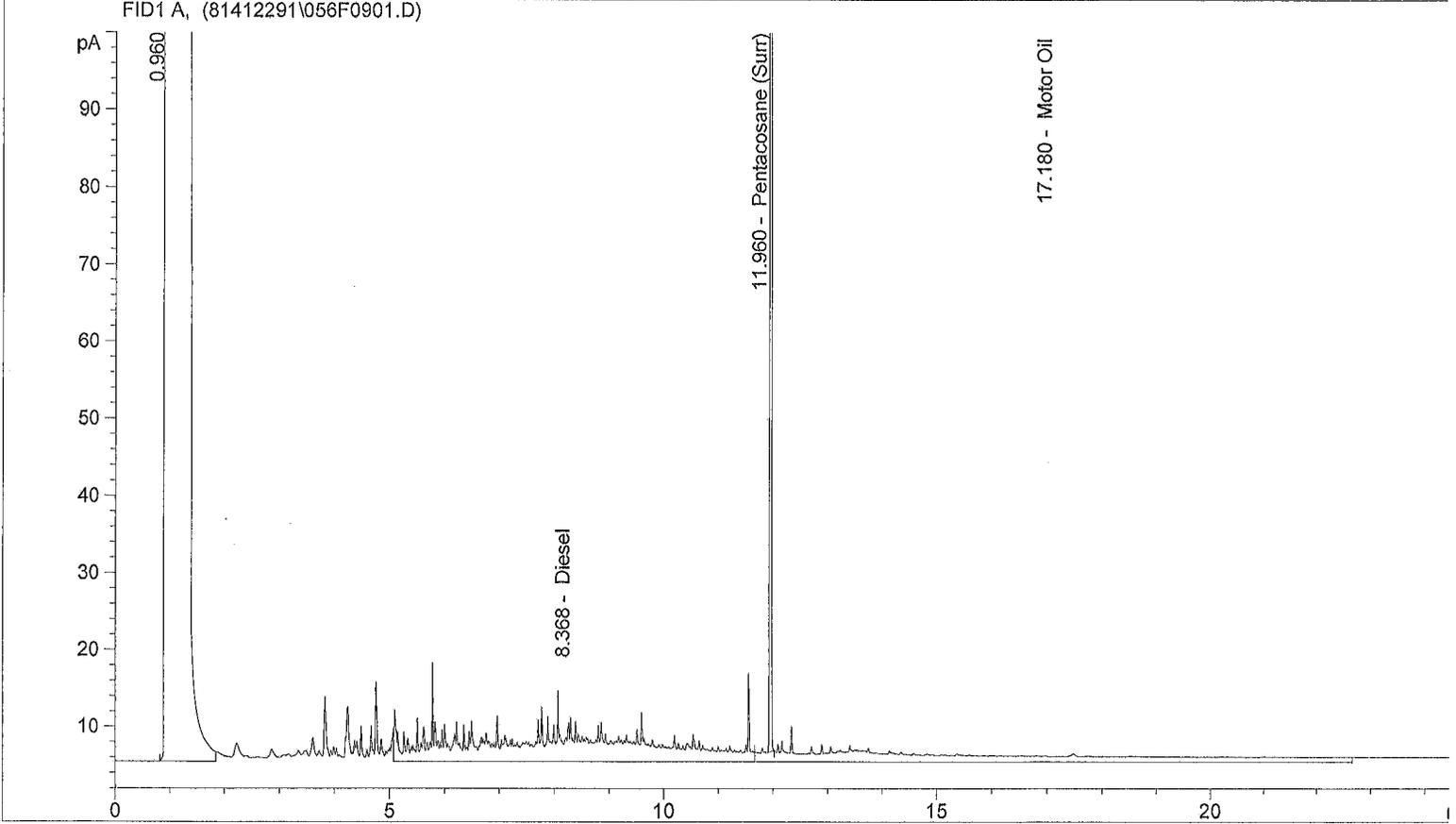
$D = 330.507 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 670 \text{ ug/L}$ Unidentified Diesel Range Product

$O = 149.244 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 300 \text{ ug/L}$ Unidentified Oil Range Product

RE BY NB
 1/9/15

R-29-146

Sample Name: EV14120162-10 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	955.833	82.524
11.960		Pentacosane (Surr)	1138.997	46.907
17.180		Motor Oil	559.755	51.547

117%

$$D = 82.524 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 170 \text{ ug/L}$$

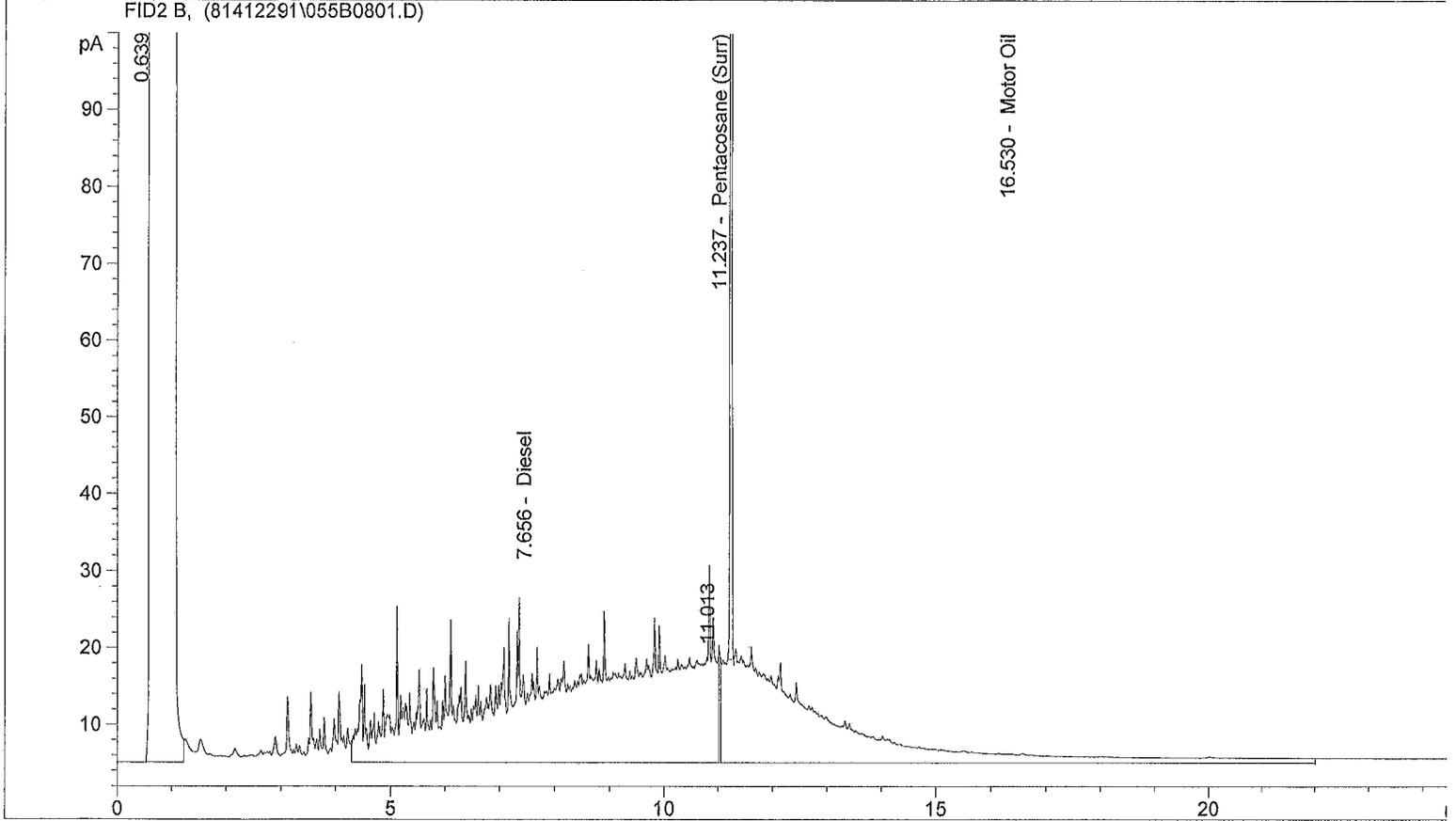
Weathered Diesel Fuel

0 < 250 ug/L

RE BY MB
 1/9/15

12.29.14

Sample Name: EV14120162-12 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	3778.957	321.493
11.237		Pentacosane (Surr)	1148.783	41.028
16.530		Motor Oil	1960.330	155.032

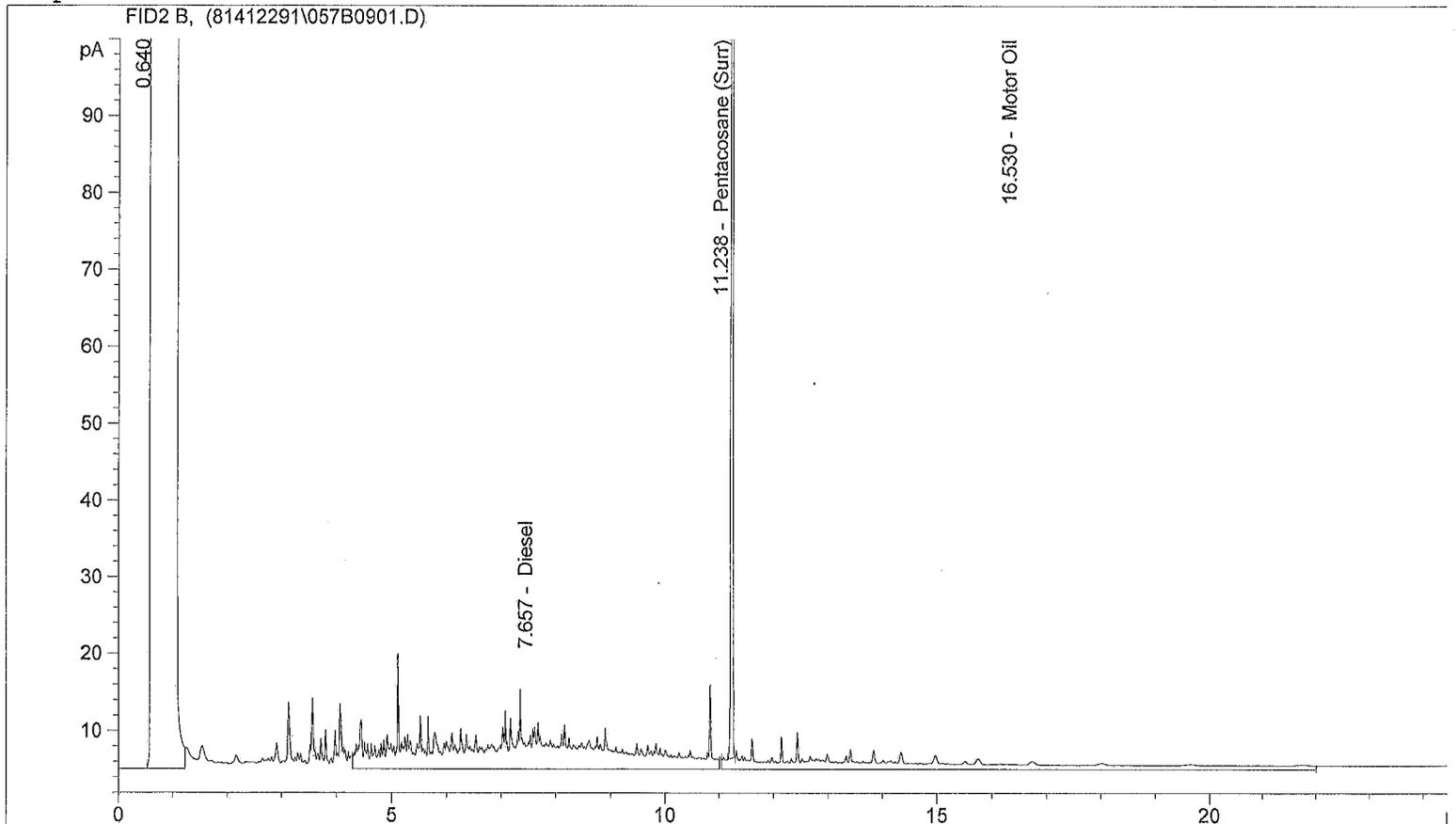
$D = 321.493 \text{ } \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 640 \text{ } \mu\text{g/L}$ Unidentified Diesel Range Product

$O = 155.032 \text{ } \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 310 \text{ } \mu\text{g/L}$ Unidentified Oil Range Product

RE: BY NB
1/9/15

12.29.14EJ

Sample Name: EV14120162-12 W SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.657	FID2 B,	Diesel	1091.011	92.817
11.238		Pentacosane (Surr)	1216.376	43.442
16.530		Motor Oil	504.812	39.923

109%

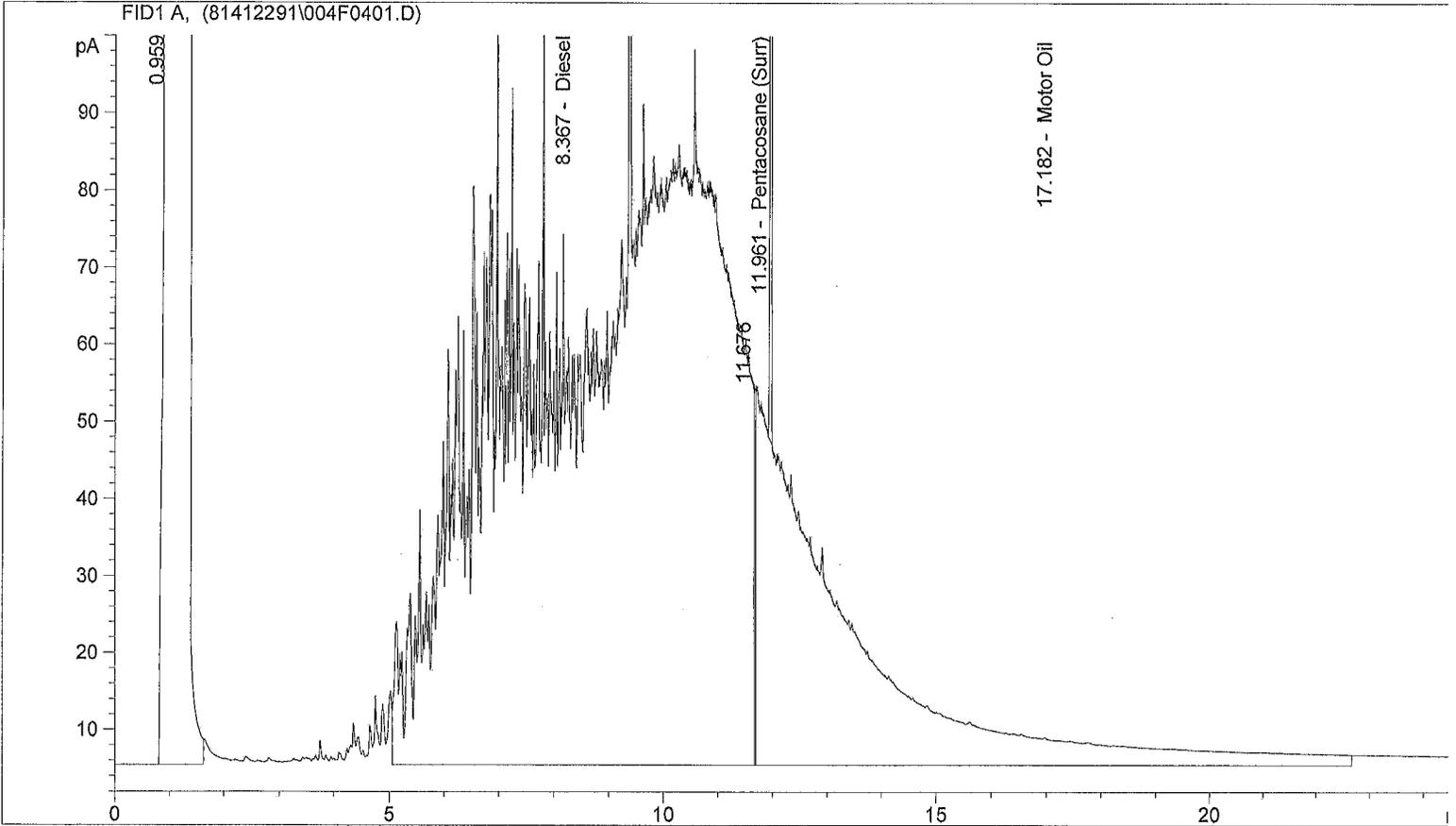
$D = 92.817 \text{ ug/mL} \times \frac{10 \text{ mL}}{495 \text{ mL}} = 190 \text{ ug/L}$ Weathered Diesel Fuel

$0 < 250 \text{ ug/L}$

RE : BY *MS*
 1/9/15

12.29.14

Sample Name: EV14120162-08 W RR



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.367	FID1 A,	Diesel	20849.582	1800.100
11.961		Pentacosane (Surr)	1051.222	43.293
17.182		Motor Oil	5581.698	514.010

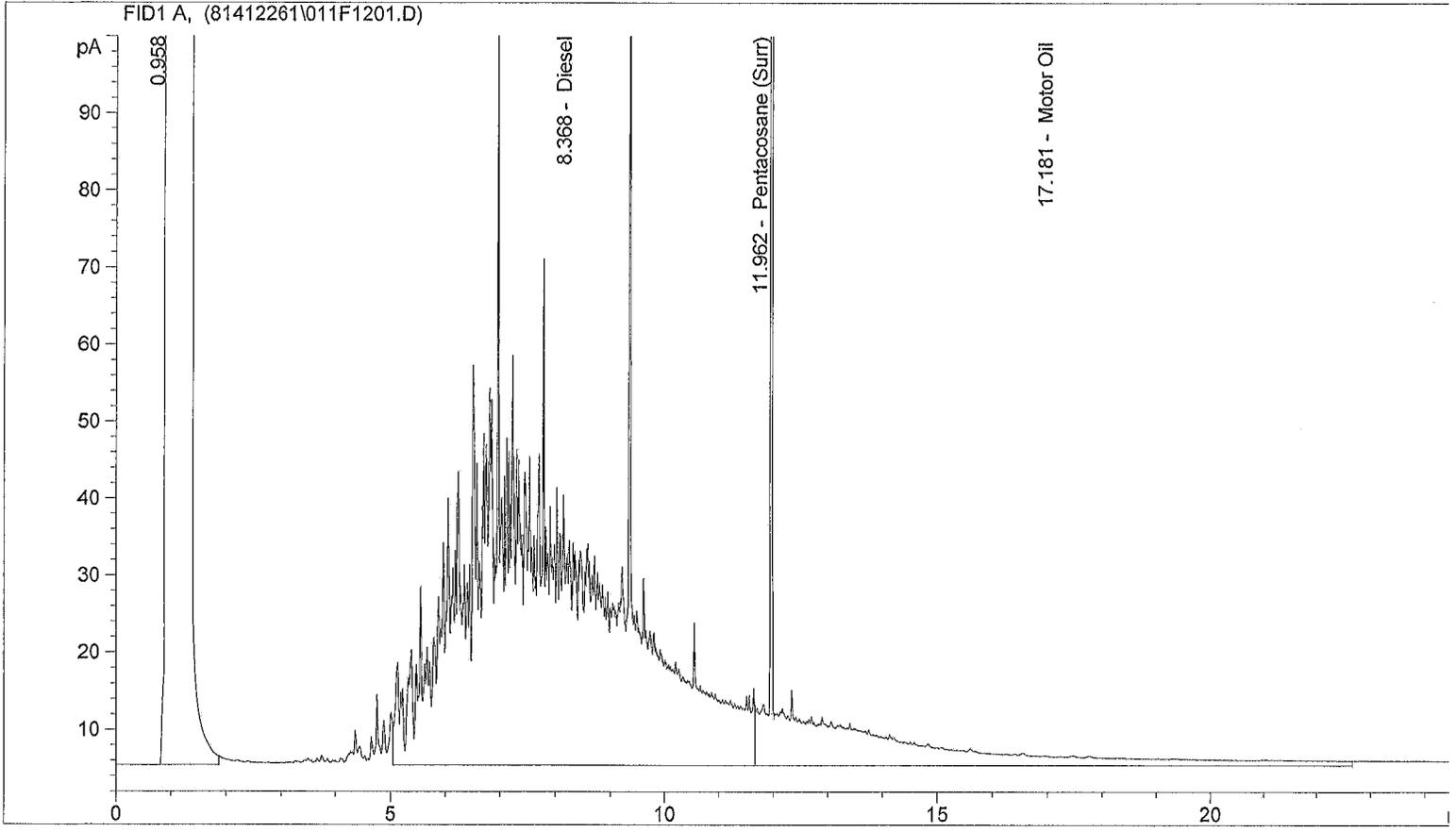
$D = 1800.100 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 3600 \text{ ug/L}$ Unidentified Diesel Range Product

$O = 514.010 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 1028 \text{ ug/L}$ Unidentified Oil Range Product

RE BY *BS*
 1/9/15

Clear bias high due to Diesel Range Product overlap
 12.29.14

Sample Name: EV14120162-08 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	7825.245	675.612
11.962		Pentacosane (Surr)	1105.479	45.527
17.181		Motor Oil	1409.925	129.838

114/

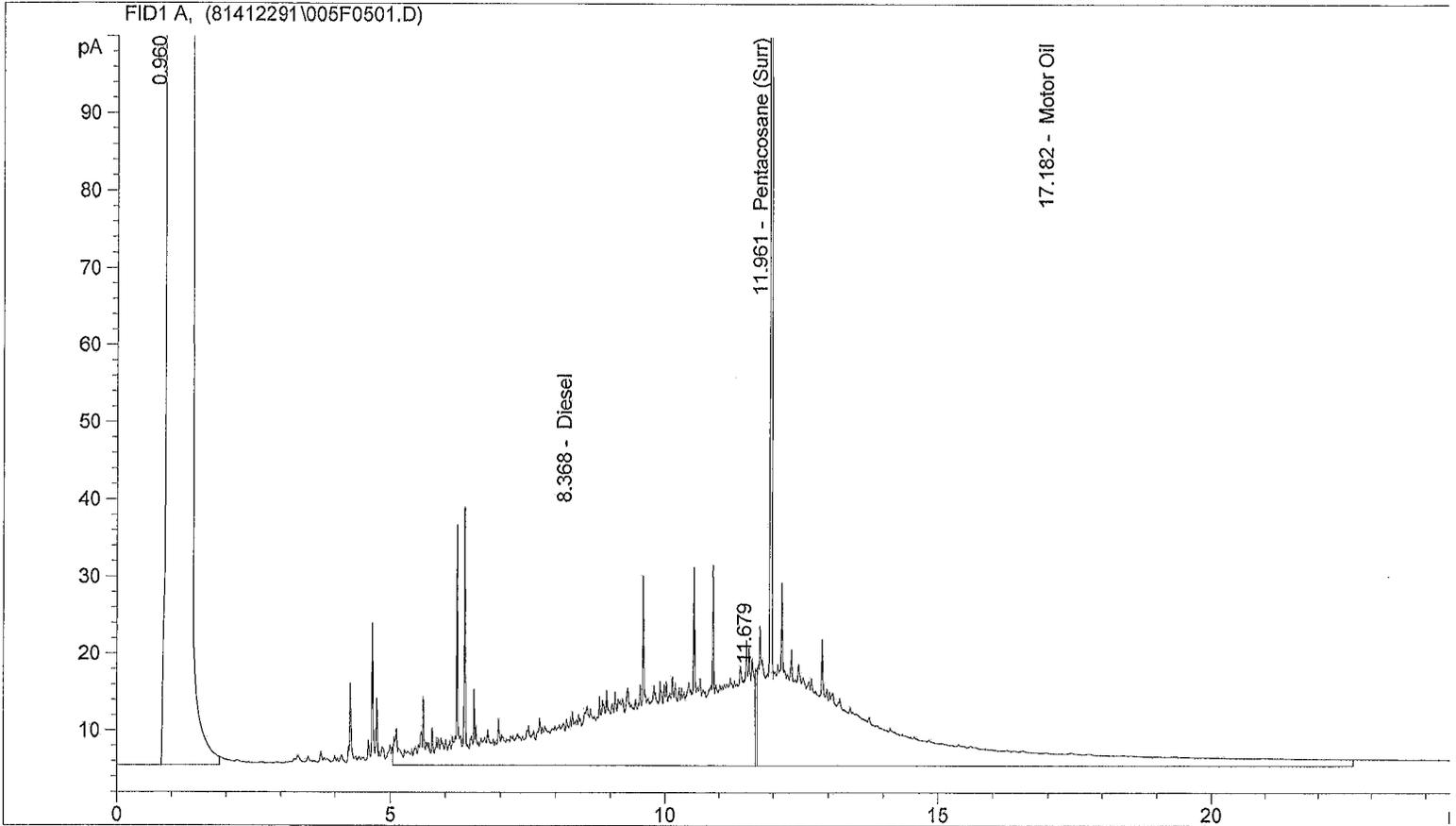
$D = 675.612 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 1400 \text{ ug/L}$ Highly Weathered Diesel Fuel or similar product

$O = 129.838 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 260 \text{ ug/L}$ Unidentified Oil Range Product (bias high due to Diesel Range Product overlap)

RE BY MB
 1/9/15

12. 29. 14 ES

Sample Name: EV14120162-13 W RR



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	2596.519	224.177
11.961		Pentacosane (Surr)	1100.813	45.335
17.182		Motor Oil	2198.587	202.464

113%

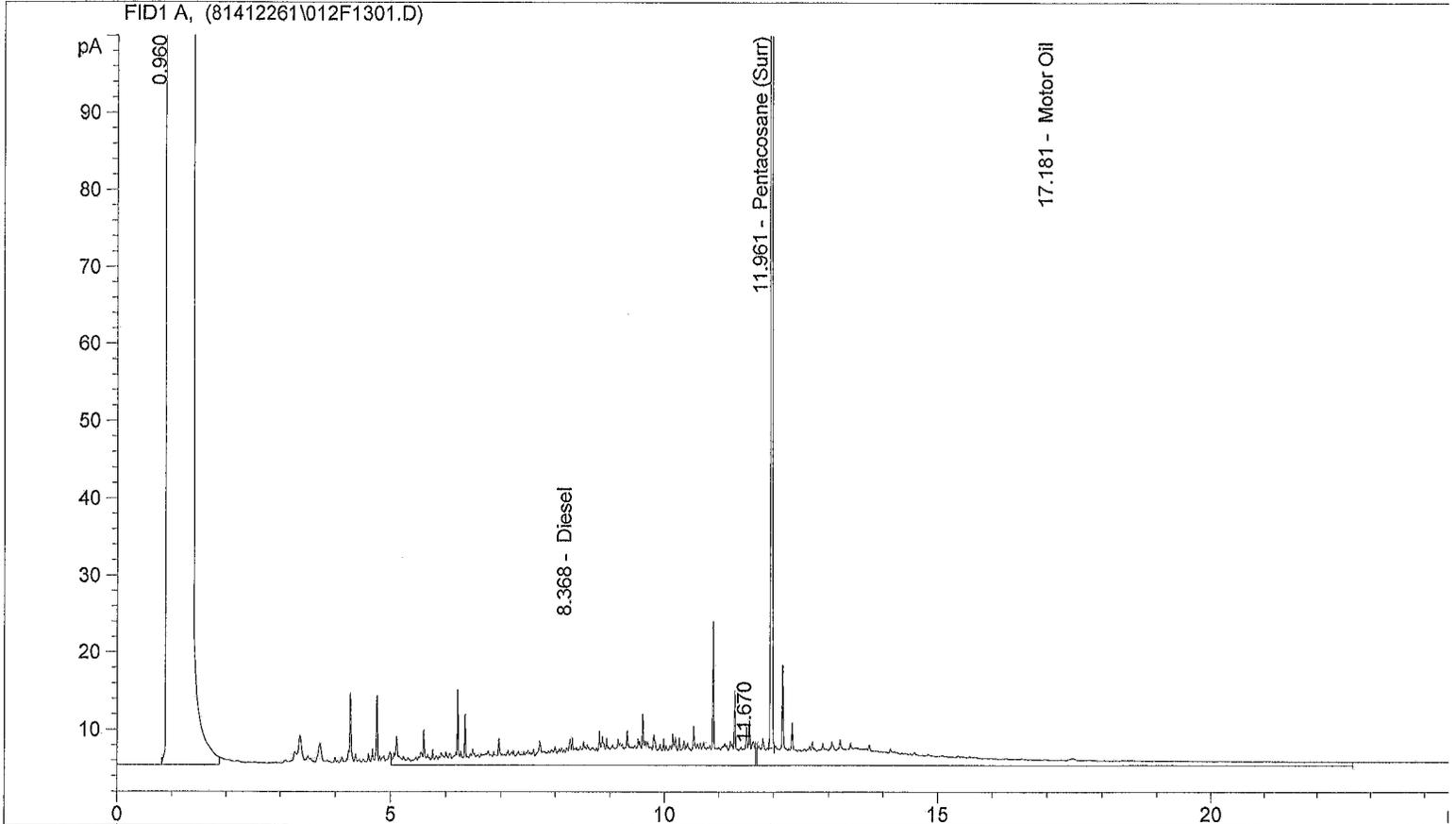
$D = 224.177 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 450 \text{ ug/L}$ Unidentified Diesel
 Range Product
 (bias high due to Oil Range Product overlap)

$O = 202.464 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 410 \text{ ug/L}$ Unidentified Oil Range
 Product

RE BY 12/29/15

12.29.14

Sample Name: EV14120162-13 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	822.646	71.025
11.961		Pentacosane (Surr)	1162.687	47.883 <i>120%</i>
17.181		Motor Oil	708.748	65.267

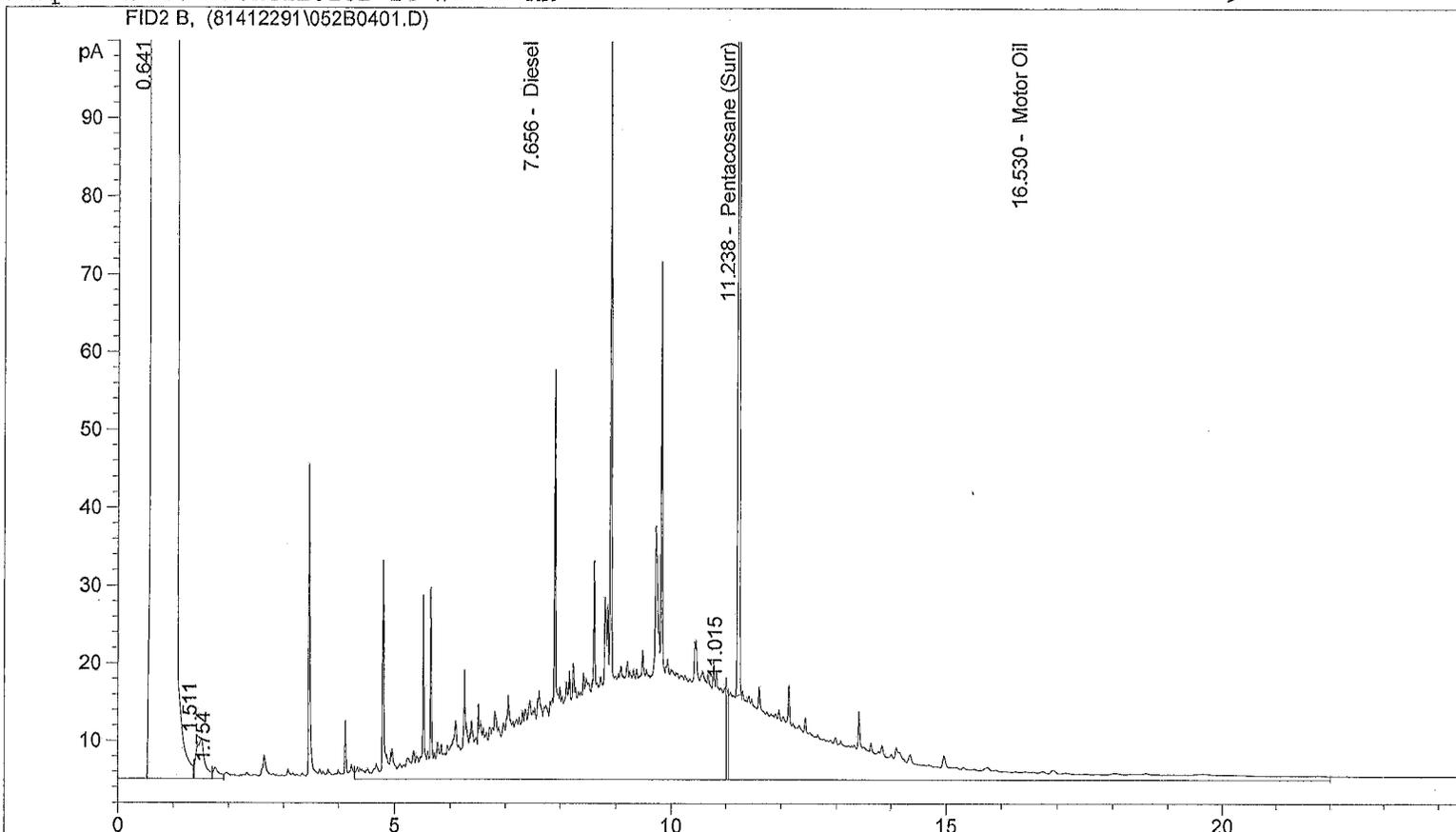
$D = 71.025 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 140 \text{ ug/L}$ Weathered Diesel Fuel

$0 < 250 \text{ ug/L}$

RE BY *MS*
 : *1/9/15*

12-29-14 EBS

Sample Name: EV14120162-14 W RR



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	3959.560	336.858
11.238		Pentacosane (Surr)	1141.986	40.785
16.530		Motor Oil	1676.611	132.594

102%

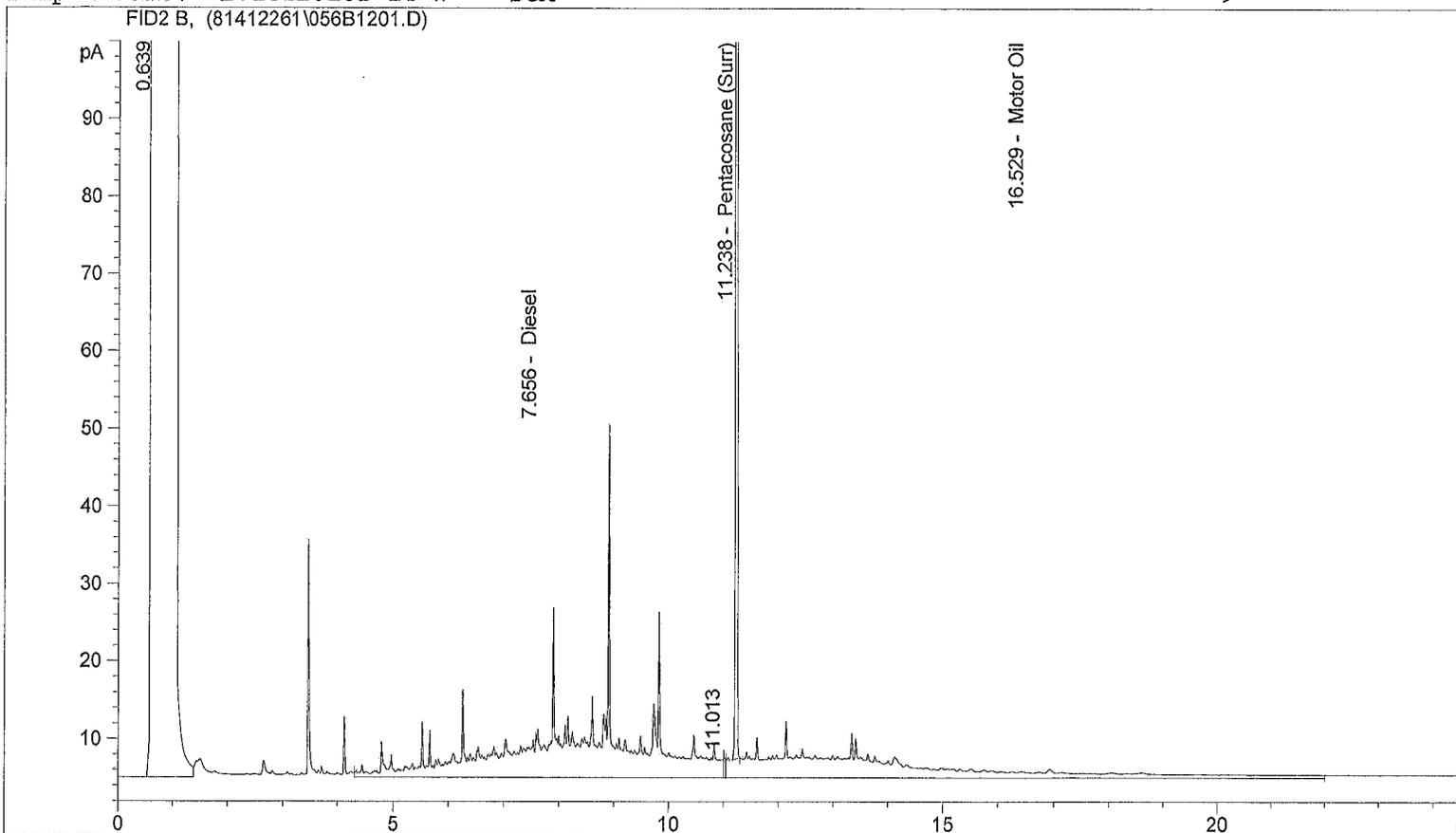
$D = 336.858 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 670 \text{ ug/L}$ Unidentified Diesel Range Product

$O = 132.594 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 270 \text{ ug/L}$ Unidentified Oil Range Product

RE BY NB
1/9/15

12.29.14

Sample Name: EV14120162-14 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	1319.569	112.262
11.238		Pentacosane (Surr)	1195.459	42.695
16.529		Motor Oil	793.000	62.714

107%

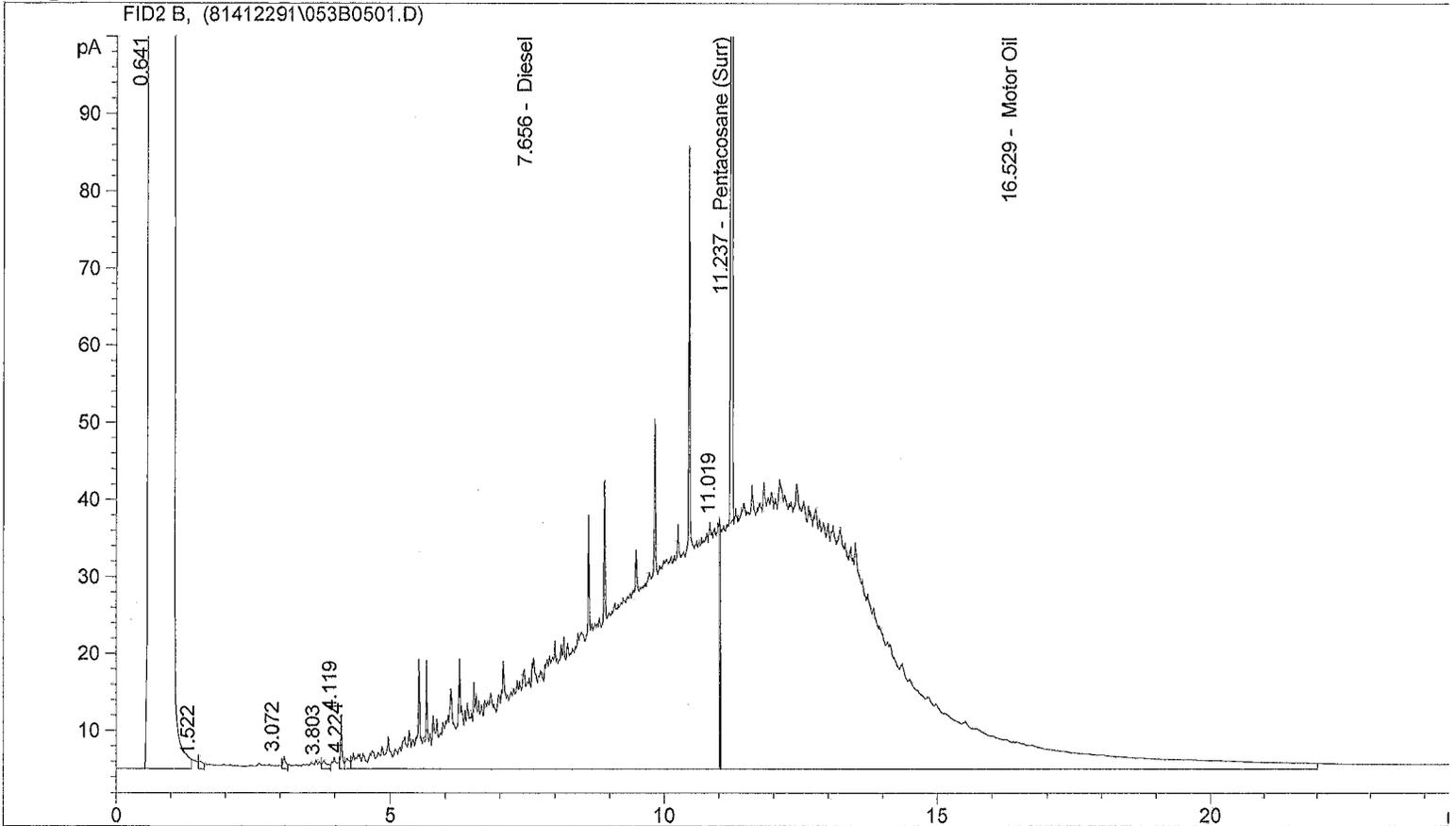
$$D = 112.262 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 220 \text{ ug/L Weathered Diesel Fuel}$$

0 < 250 ug/L

RE BY *EB*
 1/9/15

12.29.14ES

Sample Name: EV14120162-17 W RR



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	5811.338	494.397
11.237		Pentacosane (Surr)	1027.957	36.712
16.529		Motor Oil	7146.915	565.212

92%

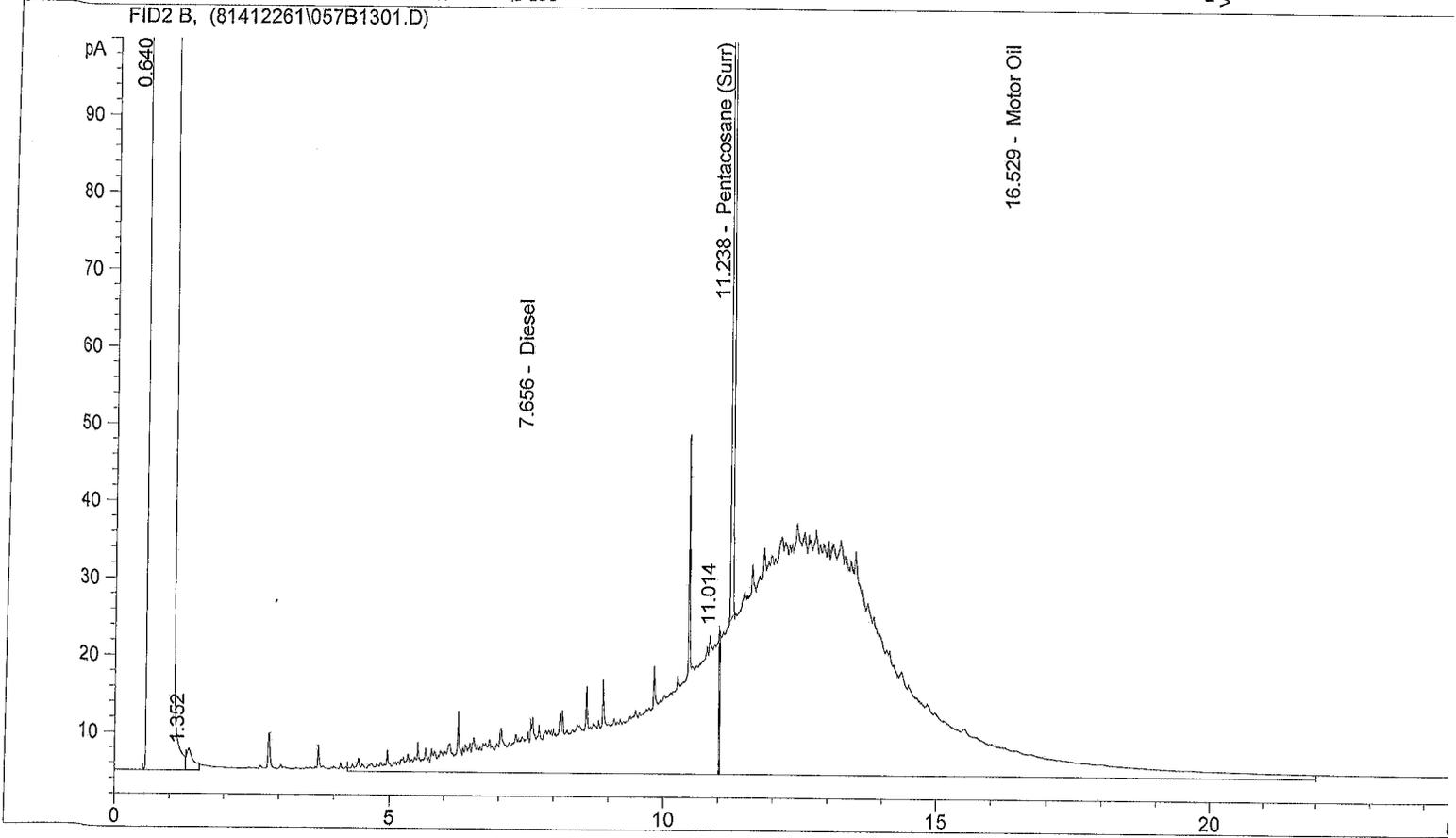
$D = 494.397 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 990 \text{ ug/L}$ Unidentified Diesel Range Product
 (bias high due to Oil Range Product overlay)

$O = 565.212 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 1100 \text{ ug/L}$ Lube Oil or similar product

RE BY *MS*
 1/9/15

12.29.14ES

Sample Name: EV14120162-17 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	2293.054	195.080
11.238		Pentacosane (Surr)	1092.464	39.016
16.529		Motor Oil	6197.550	490.132

$D = 195.080 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 390 \text{ ug/L}$ Weathered Diesel Fuel
 (bias high due to Oil Range Product overlap)

$O = 490.132 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 980 \text{ ug/L}$ Lube Oil or similar product

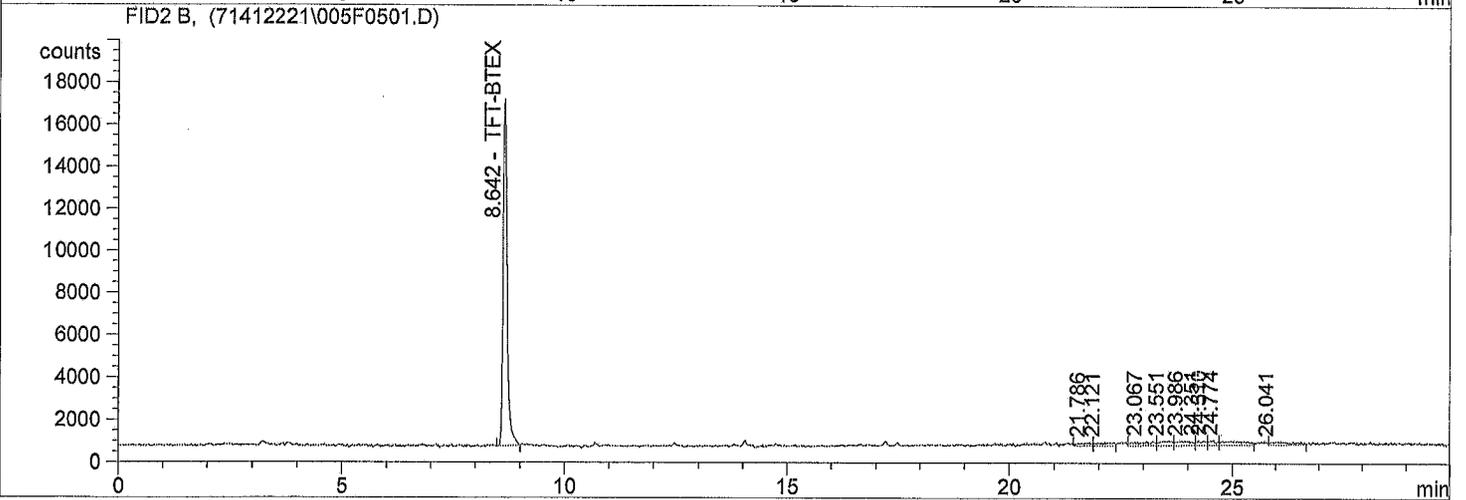
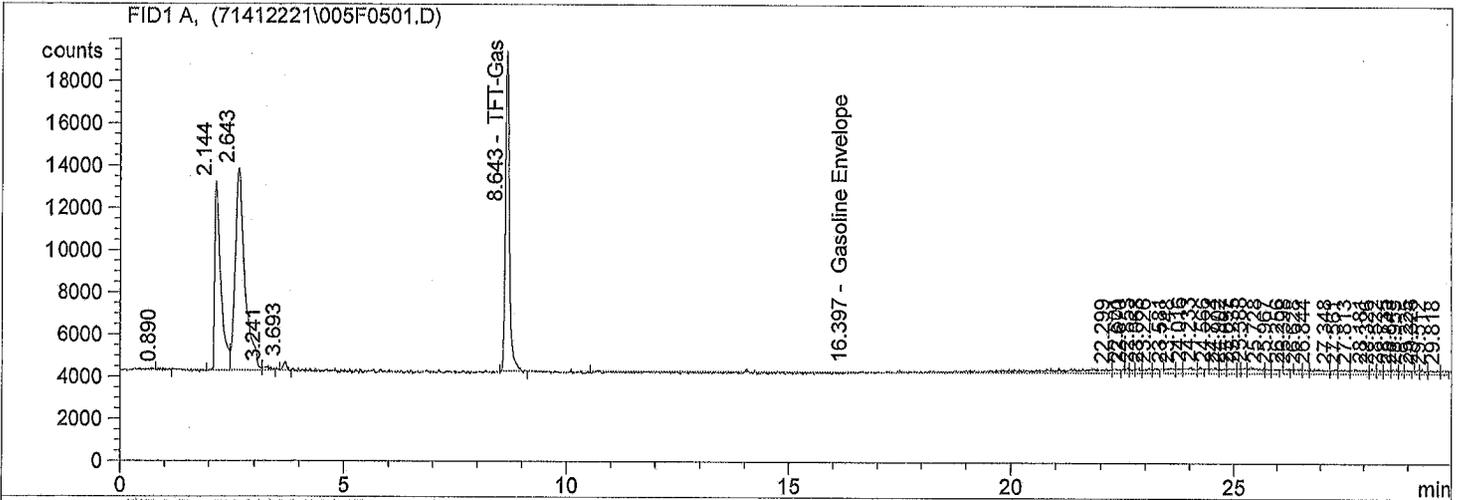
RE: BY MB/1/9/15

12.29.14/28

Gas/BTEX Instrument 70
 Data File: C:\HPCHEM\1\DATA\71412221\005F0501.D
 Injection Date & Time: 12/22/2014 8:39:04 AM
 Report Created on: 12/22/2014 1:13:03 PM
 Operator: DLC
 Acquisition Method: GAS0914.M
 Analysis Method: C:\HPCHEM\1\METHODS\GAS0914.M

FID1 A equivalent to FID analysis.
 FID2 B equivalent to PID analysis.

Sample Name: EV14120162-29 5M Dilution: X 0.0



Ret. Time	Compound Name	Area	Amount ug/L
8.643	TFT-Gas	94722.406	8.261
16.397	Gasoline Envelope	12374.332	1.983

83%

Gas < 50 µg/L

Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
0.000	Benzene	0.000	0.000
8.642	TFT-BTEX	104283.242	9.118
0.000	Toluene	0.000	0.000
0.000	Ethylbenzene	0.000	0.000
0.000	M & P- Xylenes	0.000	0.000
0.000	O-Xylene	0.000	0.000

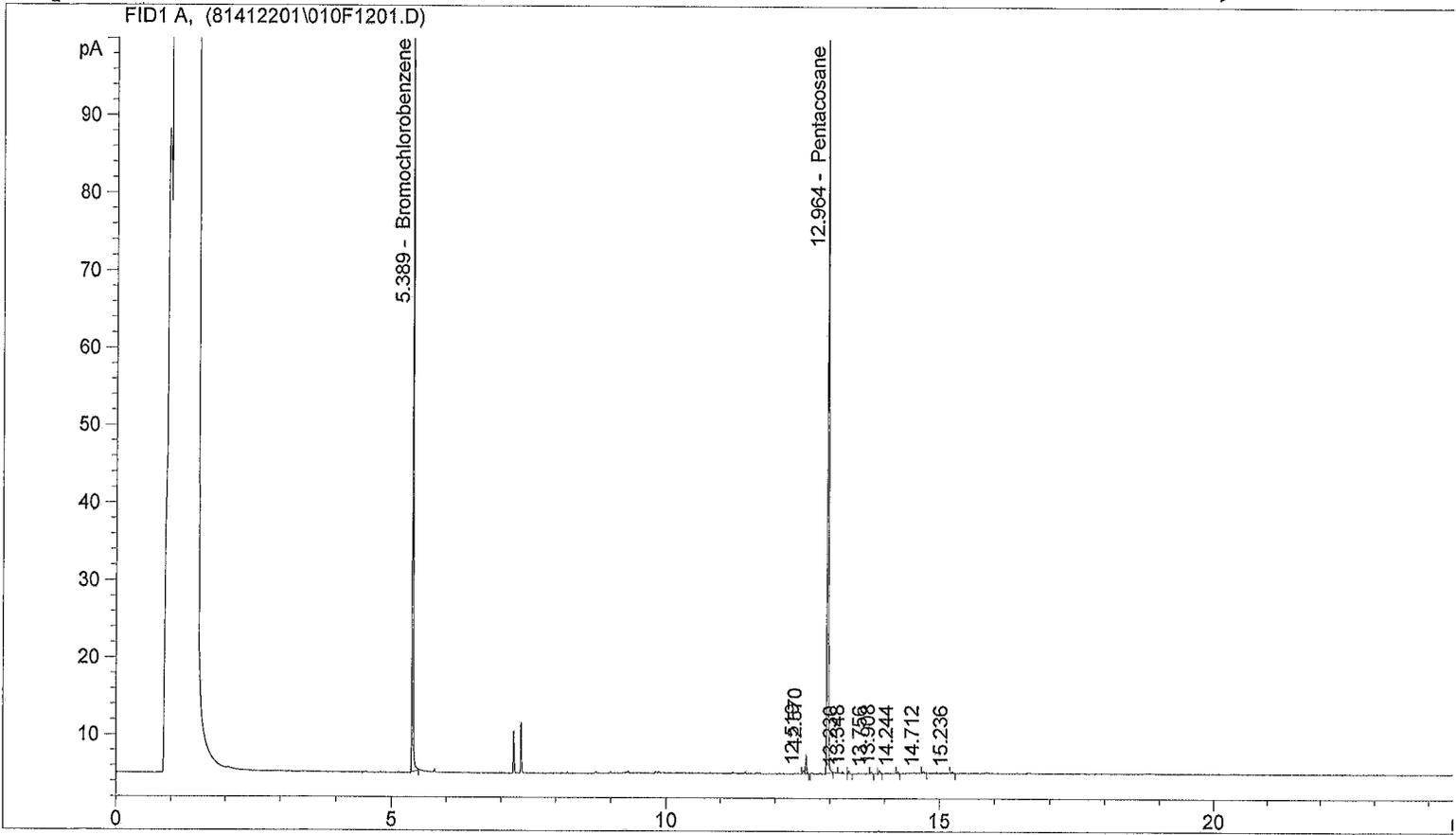
91%

RE BY MB
 E 1/9/15

BTEX < 1 µg/L x < 3 µg/L

12-29-14 DC

Sample Name: EV14120162-01 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
5.389	FID1 A,	Bromochlorobenzene	130.551	22.586	90%
12.964		Pentacosane	150.791	7.655	77%

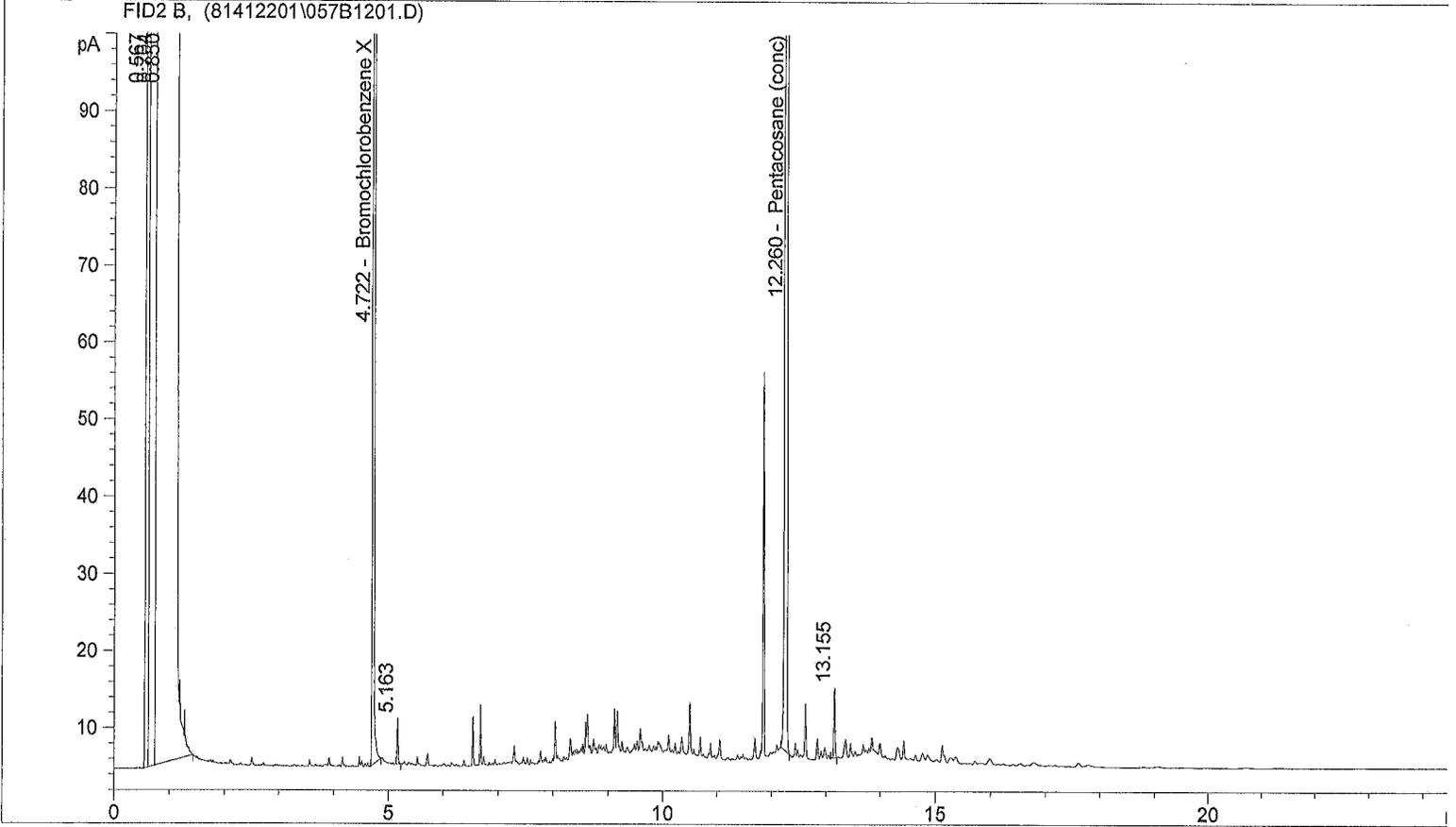
G < 130 ug/L
 D < 310 ug/L

RE BY 13
 E 1/9/15

12.22.14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\057B1201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/20/2014 2:59:16 PM 12/20/2014 2:59:16 PM
 Report Creation: 12/21/2014 9:59:08 AM

Sample Name: EV14120162-01 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.722	FID2 B,	Bromochlorobenzene X	2895.618	225.453
12.260		Pentacosane (conc)	3204.215	83.164

83%

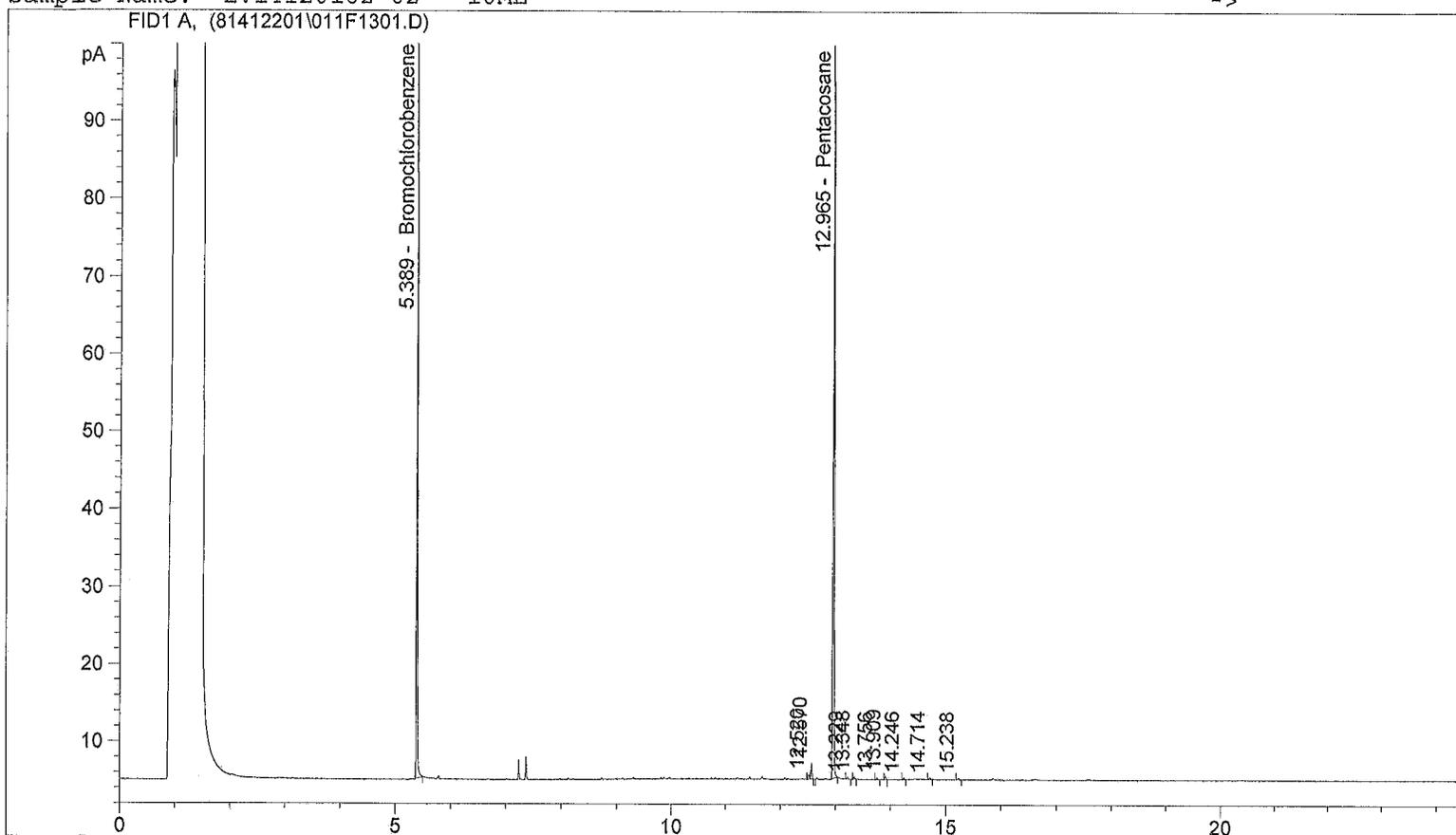
0 < 310 µg/L

RE BY *MB*
 E *1/9/15*

12.22.14ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\011F1301.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 12/20/2014 3:33:59 PM 12/20/2014 3:33:59 PM
 Report Creation: 12/21/2014 10:11:26 AM

Sample Name: EV14120162-02 10ML



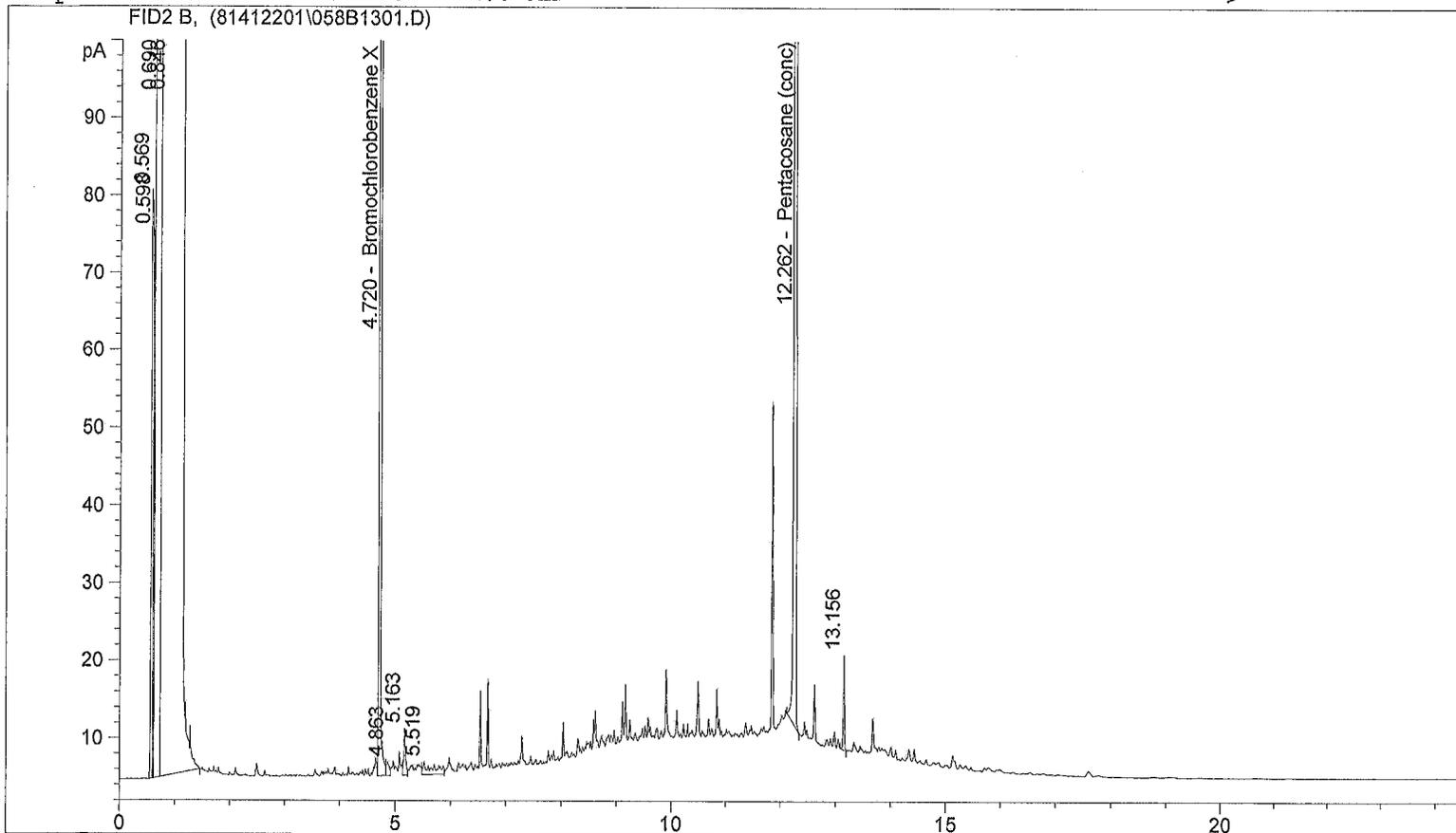
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.389	FID1 A,	Bromochlorobenzene	109.692	18.977 <i>76%</i>
12.965		Pentacosane	136.458	6.928 <i>69%</i>

G < 130 ug/L
D < 310 ug/L

RE BY *B*
 E *1/9/15*

12.22.14

Sample Name: EV14120162-02 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.720	FID2 B,	Bromochlorobenzene X	2614.279	203.548
12.262		Pentacosane (conc)	3084.063	80.046

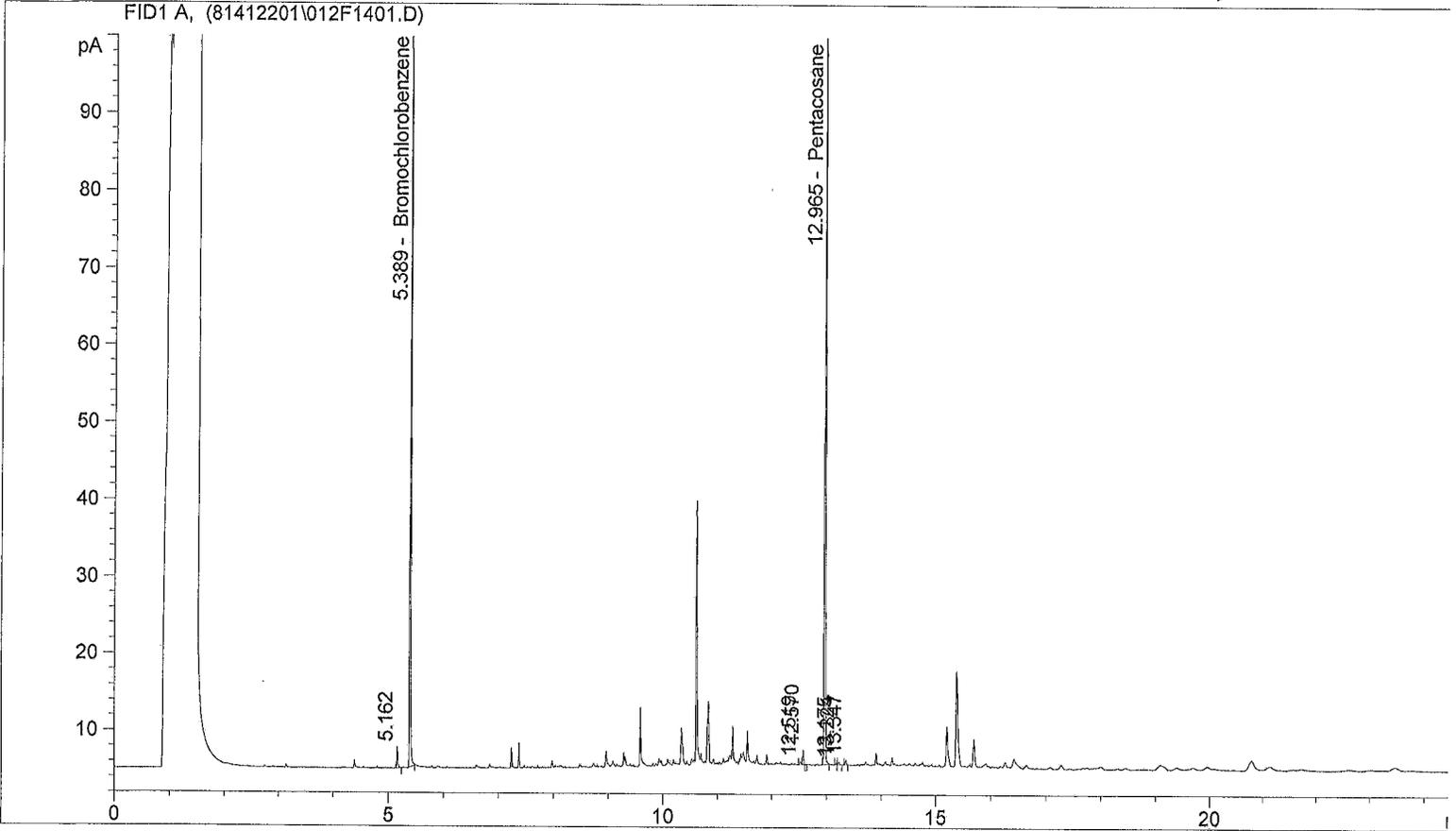
80%

0 < 310 µg/L

RE BY *RB*
 1/9/15

12-22-14

Sample Name: EV14120162-03 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.389	FID1 A,	Bromochlorobenzene	133.505	23.097
12.965		Pentacosane	143.272	7.274

92%
73%

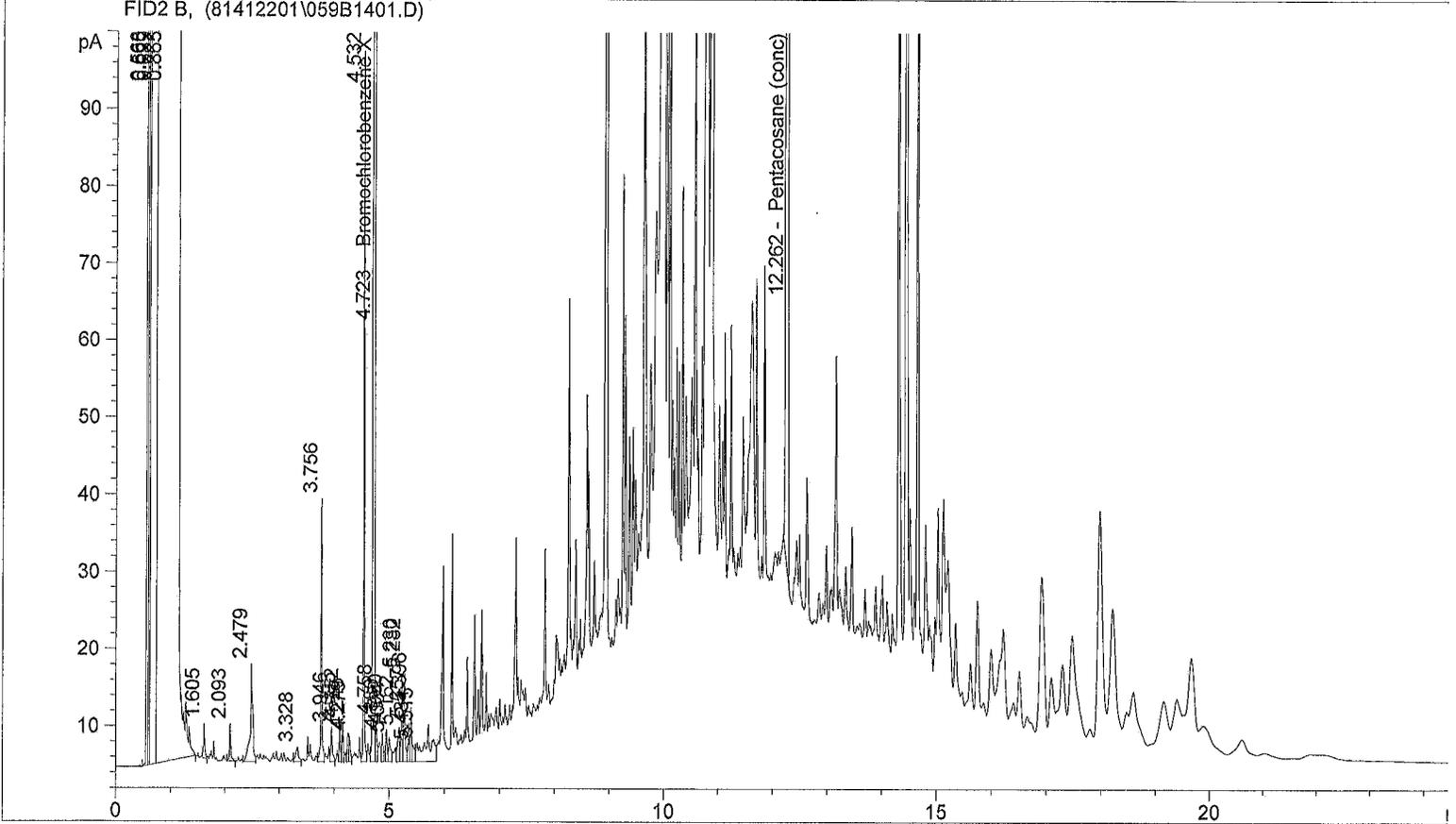
G < 130 µg/L
D < 310 µg/L

RE BY *MS*
E *1/9/15*

12.22.14B

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\059B1401.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/20/2014 4:08:20 PM 12/20/2014 4:08:20 PM
 Report Creation: 12/21/2014 9:59:59 AM

Sample Name: EV14120162-03 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.723	FID2 B,	Bromochlorobenzene X	3114.480	242.493
12.262		Pentacosane (conc)	3054.811	79.286

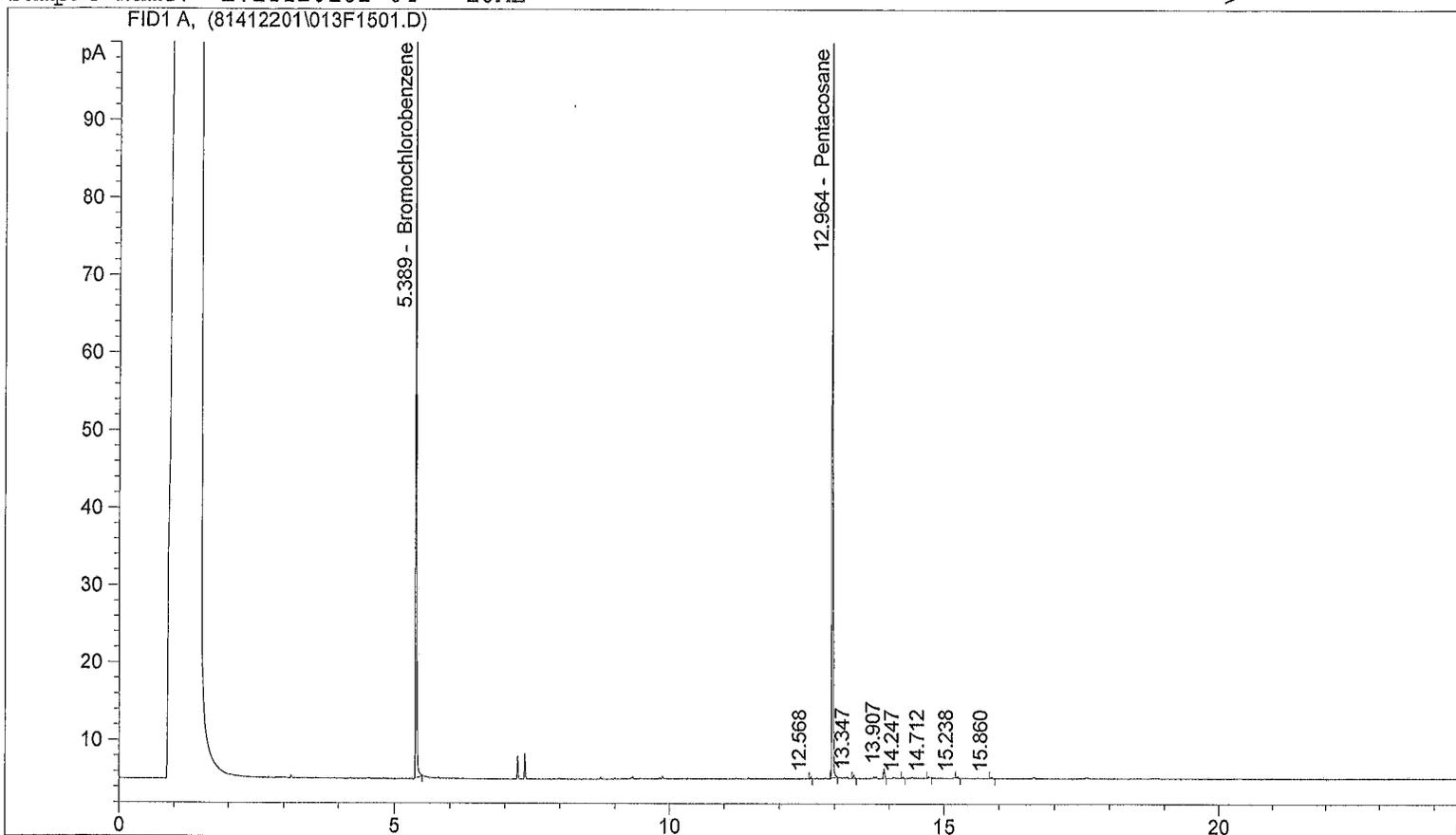
79%

0 > 310 µg/L Unidentified Oil Range Product

RE	BY	<i>15</i>
		<i>1/9/15</i>

12.22.14

Sample Name: EV14120162-04 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.389	FID1 A,	Bromochlorobenzene	144.964	25.080
12.964		Pentacosane	149.798	7.605

100%
76%

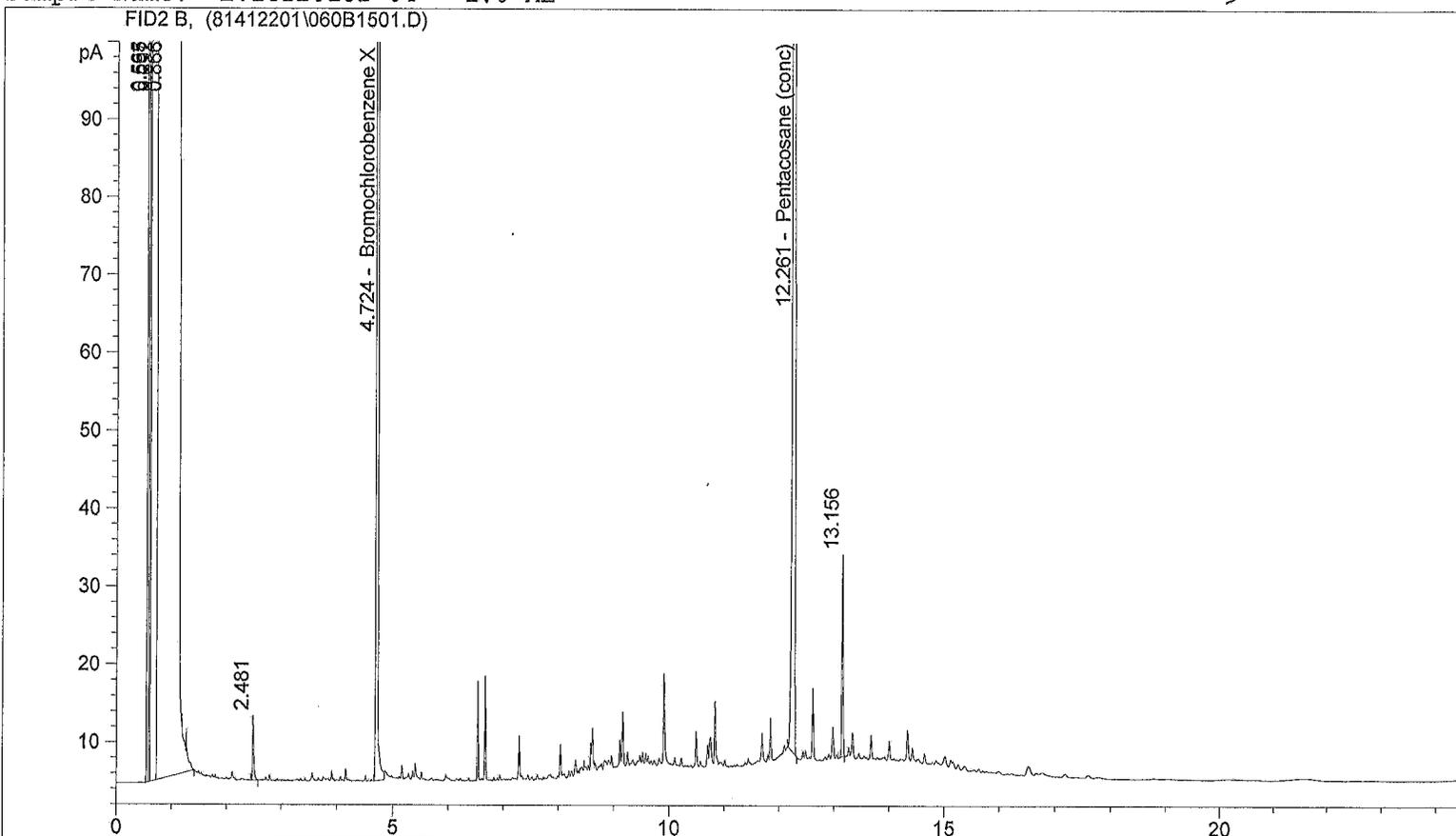
G < 130 ug/L
 D < 310 ug/L

RE BY MS
 1/9/15

12-22-14E

Sample Name: EV14120162-04 1.0 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.724	FID2 B,	Bromochlorobenzene X	3126.168	243.403
12.261		Pentacosane (conc)	3081.615	79.982

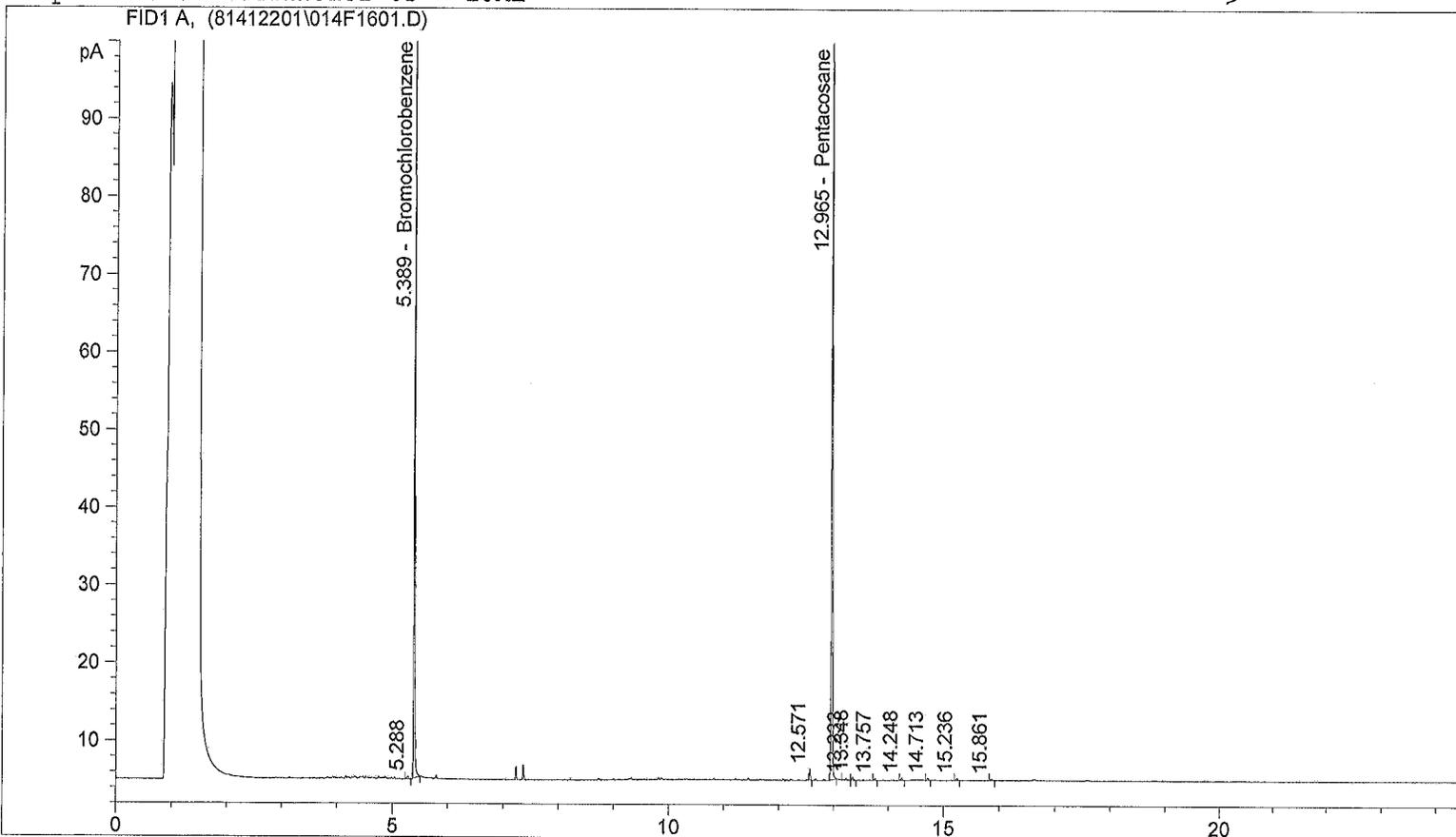
80%

0 < 310 ug/L

RE	BY
	<i>MB</i>
	<i>1/15</i>

12.22.14E

Sample Name: EV14120162-05 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.389	FID1 A,	Bromochlorobenzene	108.273	18.732
12.965		Pentacosane	142.195	7.219

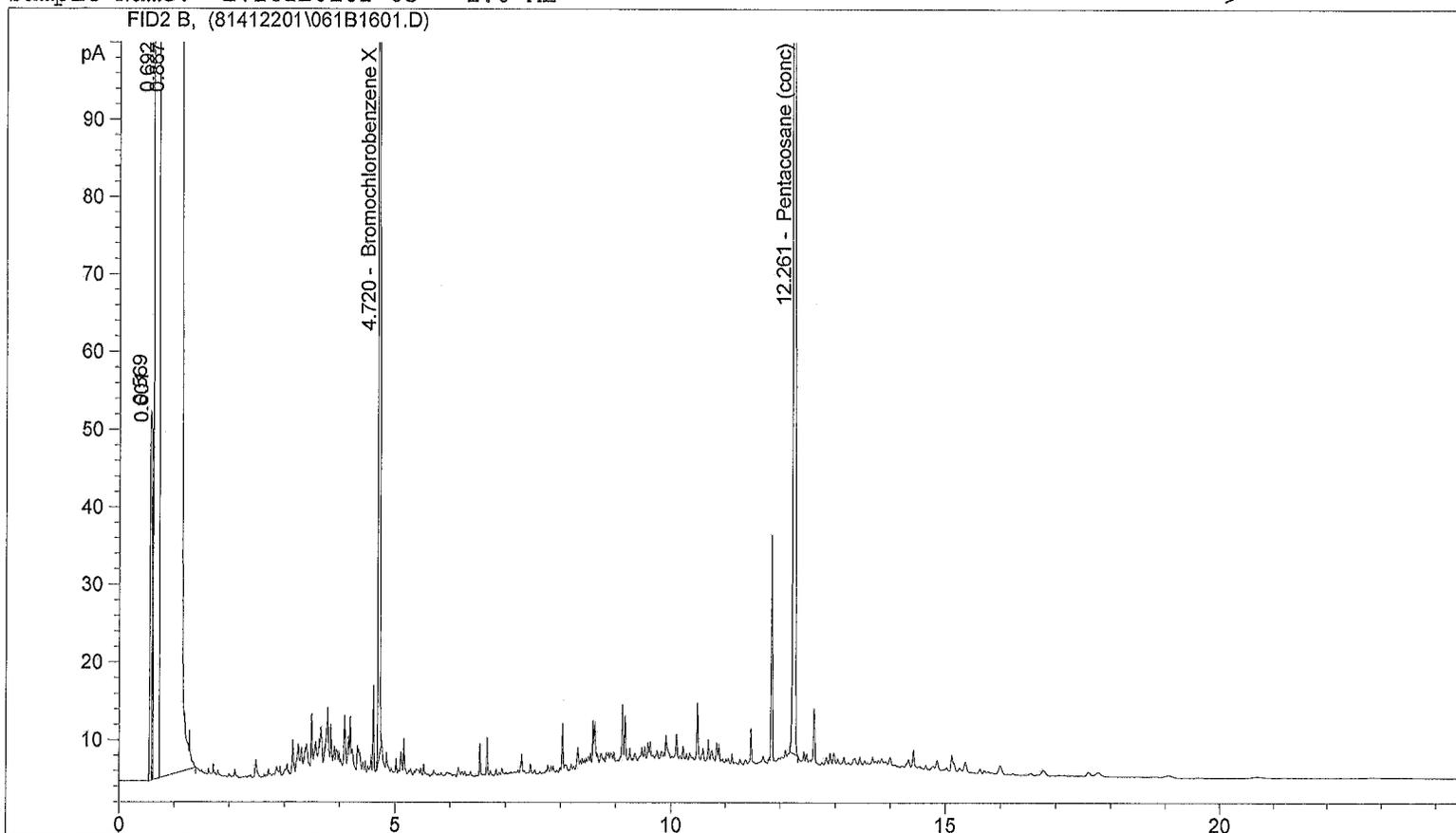
75%
72%

G < 130 ug/L
D < 310 ug/L

RE BY *AB*
1/9/15

12.22.14ES

Sample Name: EV14120162-05 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.720	FID2 B,	Bromochlorobenzene X	2428.098	189.052
12.261		Pentacosane (conc)	3050.951	79.186

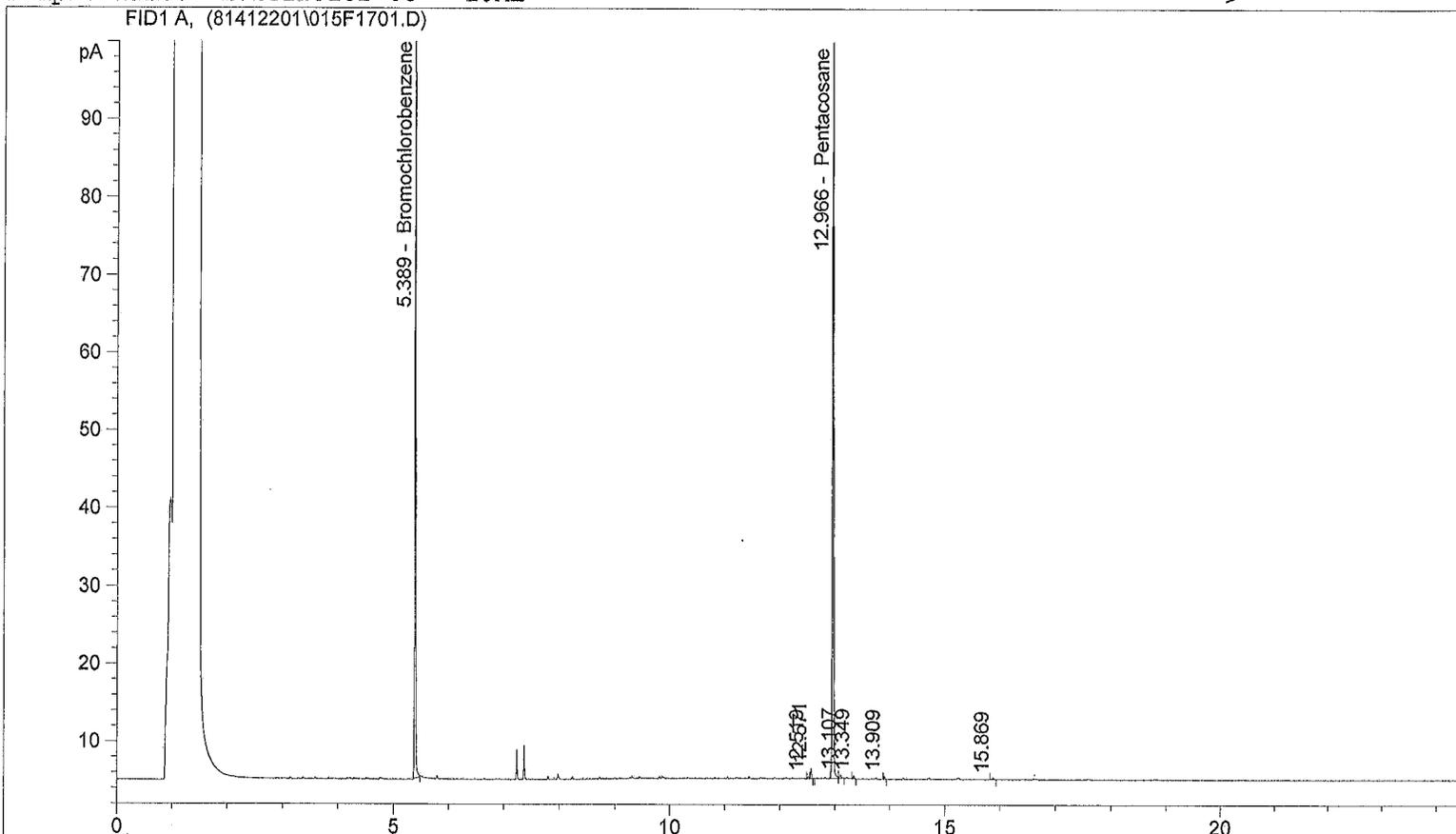
791,

0 < 310 ug/L

RE BY 15
 1/9/15

12.22.14ES

Sample Name: EV14120162-06 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.389	FID1 A,	Bromochlorobenzene	117.691	20.361
12.966		Pentacosane	165.153	8.384

81/
84/

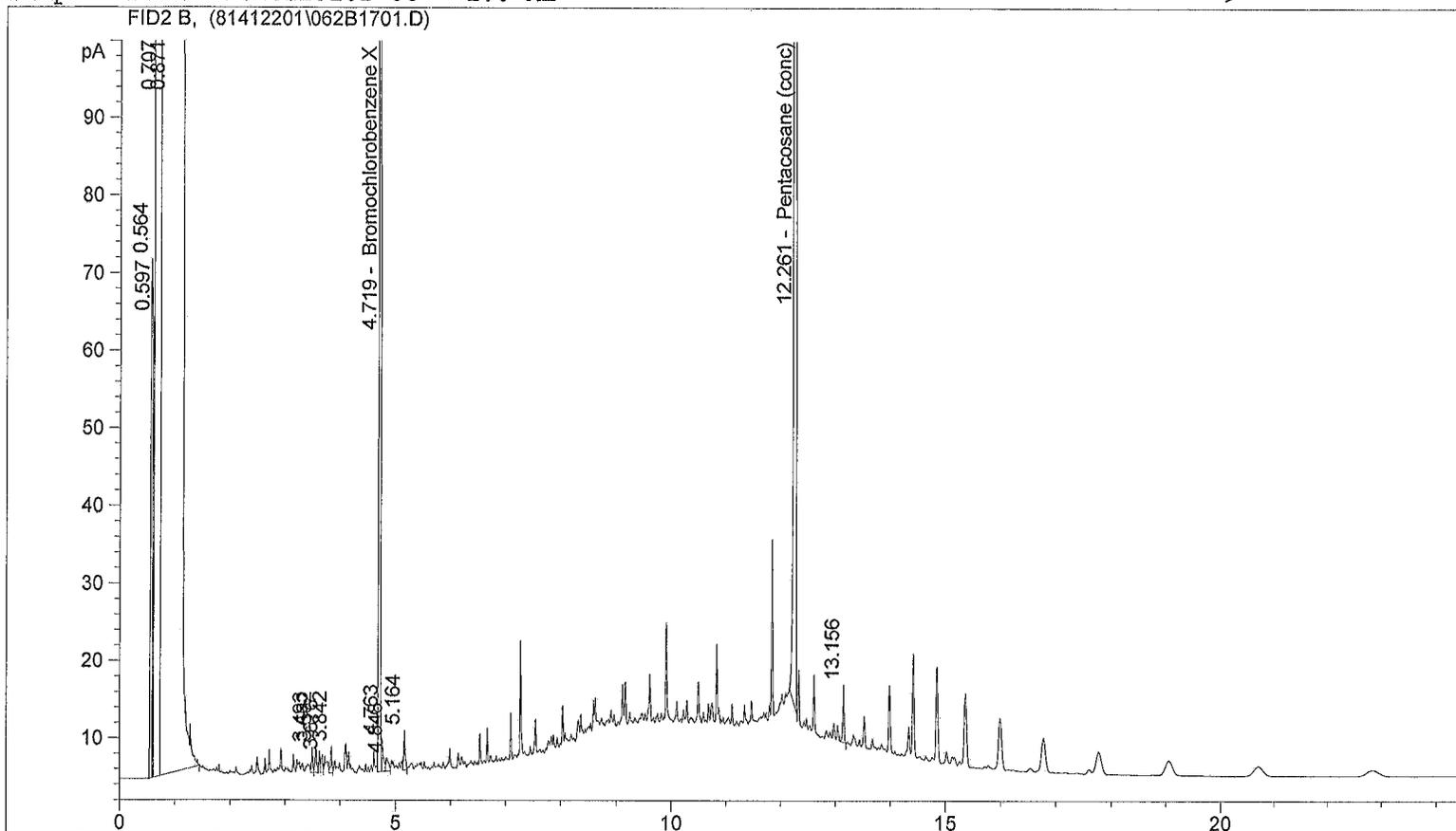
G < 130 mg/L
 D < 310 mg/L

RE BY 12/19/15

12-22-14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\062B1701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/20/2014 5:52:02 PM 12/20/2014 5:52:02 PM
 Report Creation: 12/21/2014 10:00:51 AM

Sample Name: EV14120162-06 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.719	FID2 B,	Bromochlorobenzene X	2349.765	182.953
12.261		Pentacosane (conc)	3093.589	80.293

80%

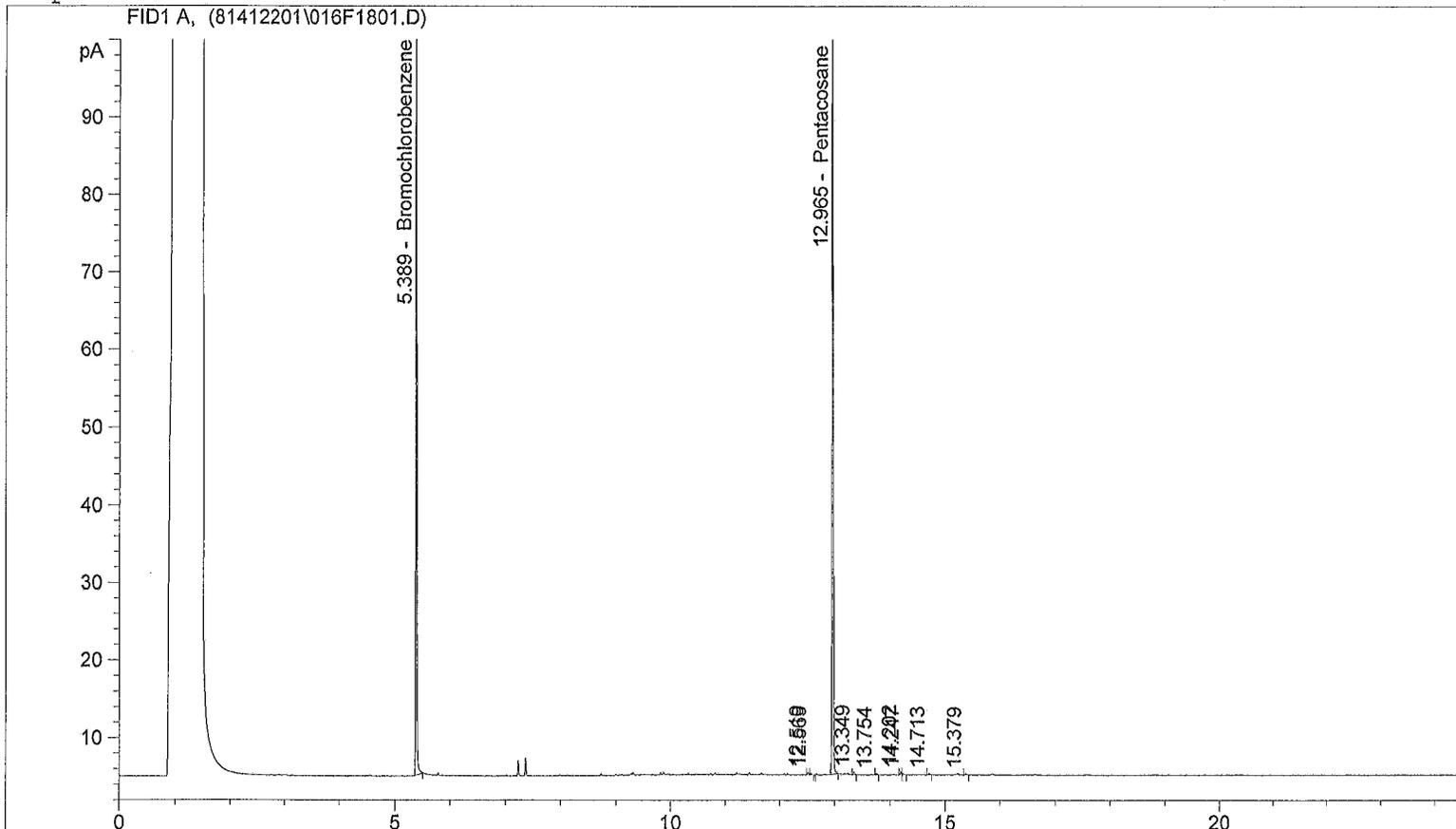
0 < 310 ug/L

REC BY *RS*
 1/9/15

12.22.14E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\016F1801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 12/20/2014 6:26:27 PM 12/20/2014 6:26:27 PM
 Report Creation: 12/21/2014 10:13:00 AM

Sample Name: EV14120162-07 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.389	FID1 A,	Bromochlorobenzene	157.169	27.191
12.965		Pentacosane	161.018	8.174

109%
82%

G < 130 μ g/L
 D < 310 μ g/L

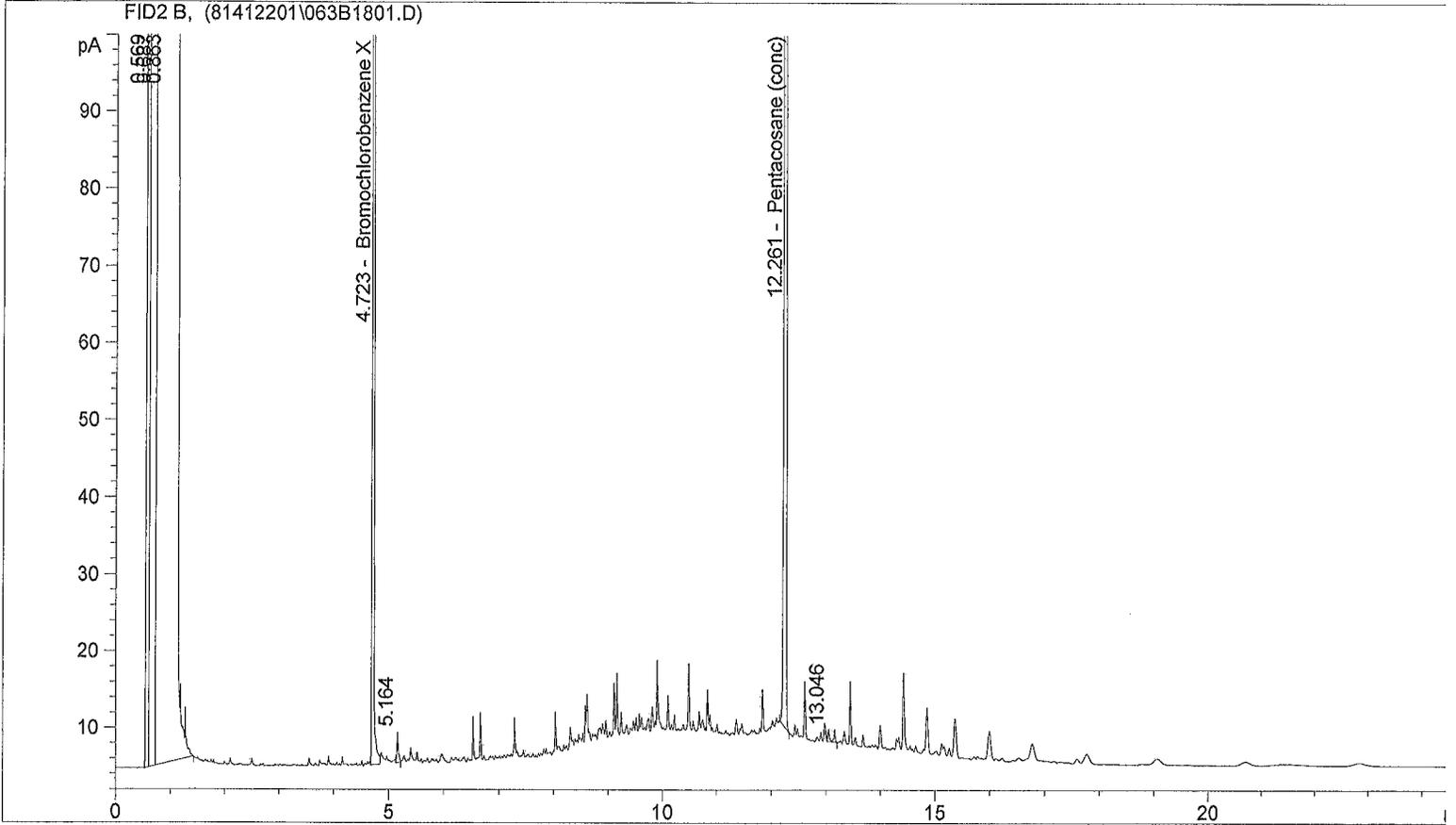
RE BY *MS*
 1/9/15

12.22.14E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\063B1801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/20/2014 6:26:27 PM 12/20/2014 6:26:27 PM
 Report Creation: 12/21/2014 10:01:07 AM

Sample Name: EV14120162-07 1.0 ML

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Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.723	FID2 B,	Bromochlorobenzene X	3031.532	236.035
12.261		Pentacosane (conc)	2999.512	77.851

78%

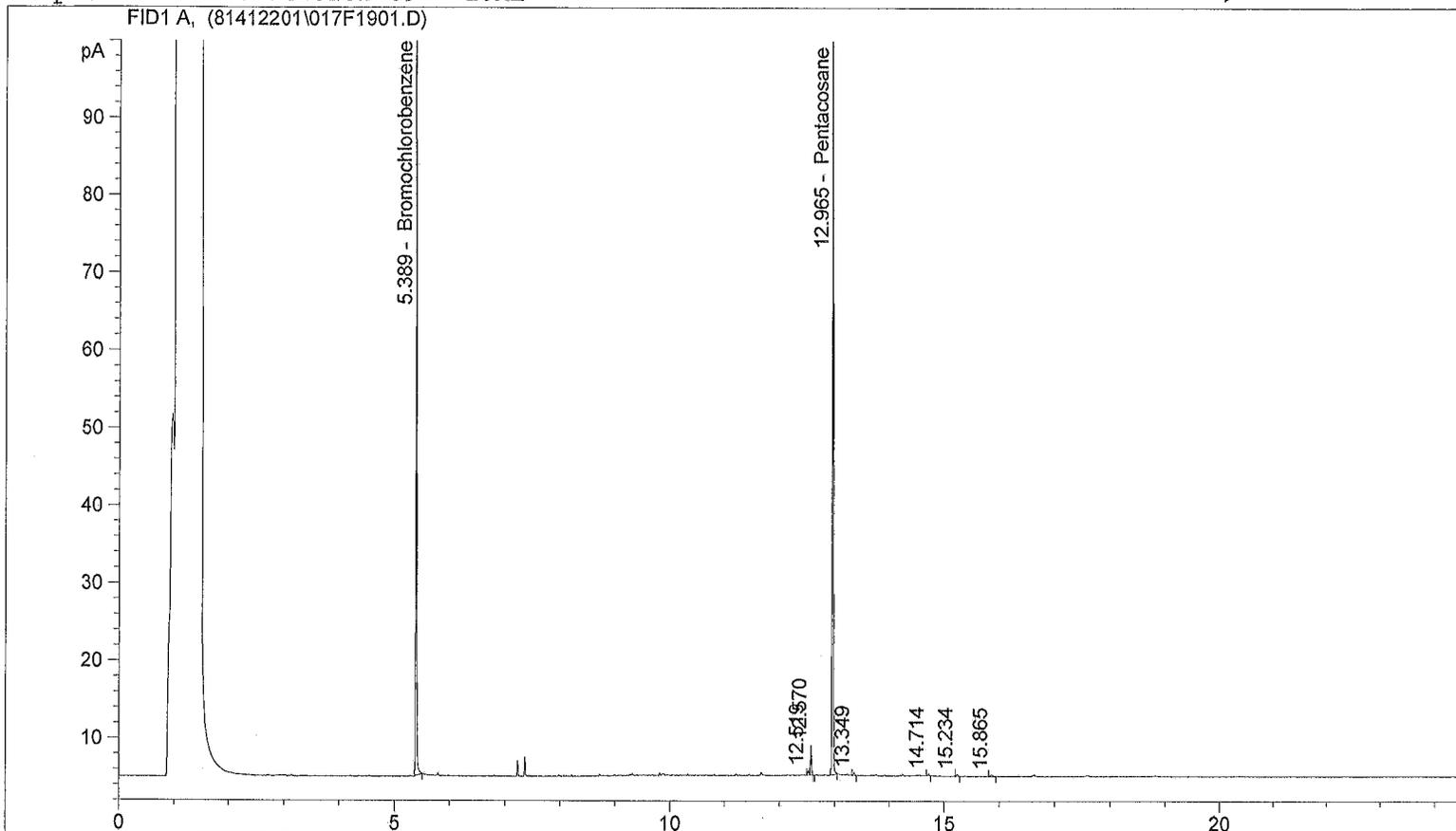
0 < 370 µg/L

RE BY *RS*
 1/9/15

12.22.14E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\017F1901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 12/20/2014 7:00:54 PM 12/20/2014 7:00:54 PM
 Report Creation: 12/21/2014 10:13:11 AM

Sample Name: EV14120162-09 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.389	FID1 A,	Bromochlorobenzene	110.221	19.069
12.965		Pentacosane	151.544	7.693

76%
 70%, 77% ES

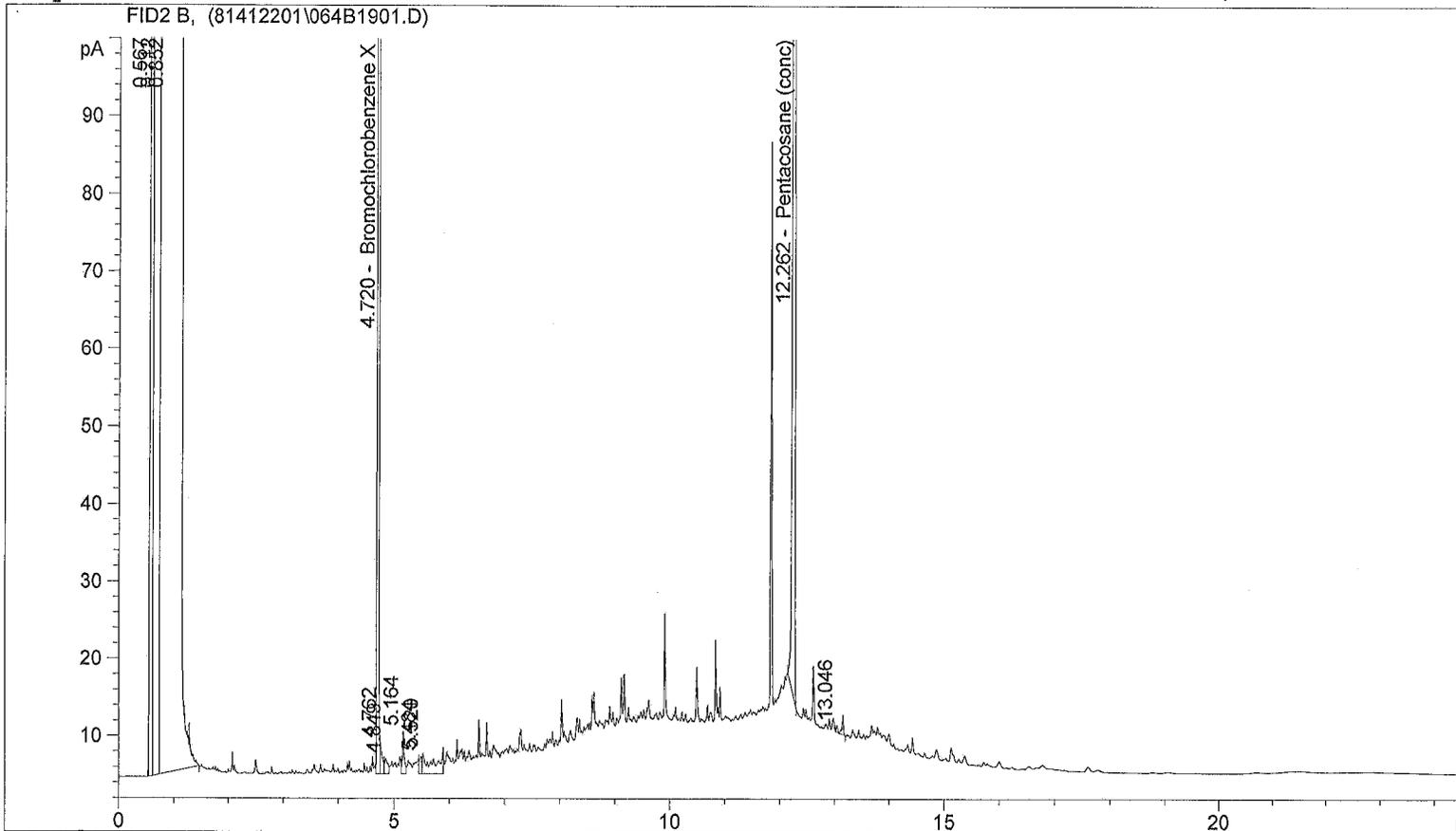
G < 130 ug/L
 D < 310 ug/L

RE BY RS
 1/9/15

12.22.14E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\064B1901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/20/2014 7:00:54 PM 12/20/2014 7:00:54 PM
 Report Creation: 12/21/2014 10:01:25 AM

Sample Name: EV14120162-09 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.720	FID2 B,	Bromochlorobenzene X	2381.251	185.404
12.262		Pentacosane (conc)	3090.320	80.208

80%

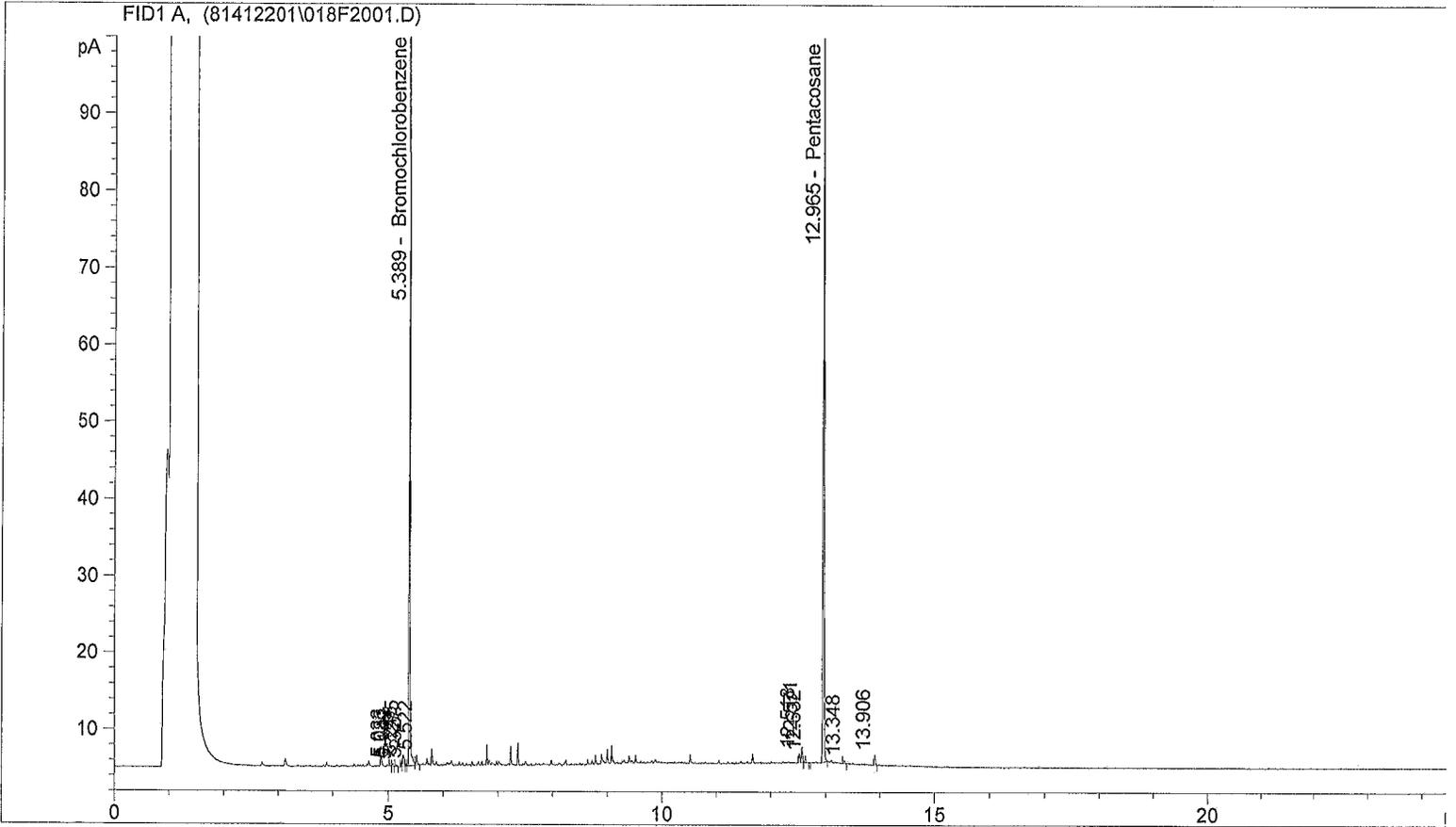
0 < 310 µg/L

RE: BY BS
 1/9/15

12-22-14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\018F2001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 12/20/2014 7:35:23 PM 12/20/2014 7:35:23 PM
 Report Creation: 12/21/2014 10:13:22 AM

Sample Name: EV14120162-10 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.389	FID1 A,	Bromochlorobenzene	116.173	20.099
12.965		Pentacosane	148.880	7.558

80%
76%

G < 130 µg/L
 D < 310 µg/L
 ES

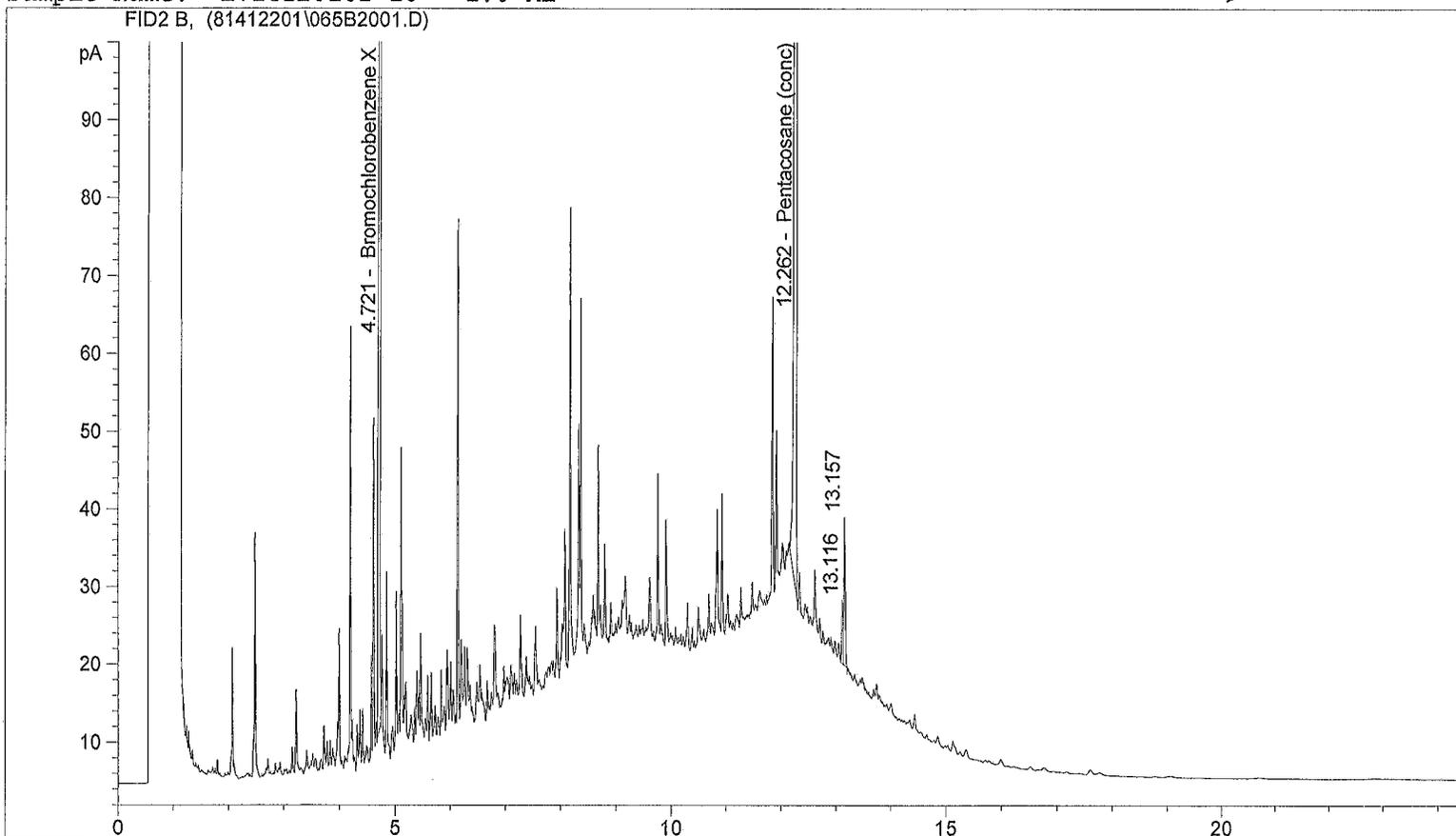
RE BY MS
 1/9/15

12.22.14ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\065B2001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/20/2014 7:35:23 PM 12/20/2014 7:35:23 PM
 Report Creation: 12/21/2014 10:02:10 AM

Sample Name: EV14120162-10 1.0 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.721	FID2 B,	Bromochlorobenzene X	2524.836	196.584
12.262		Pentacosane (conc)	3047.291	79.091

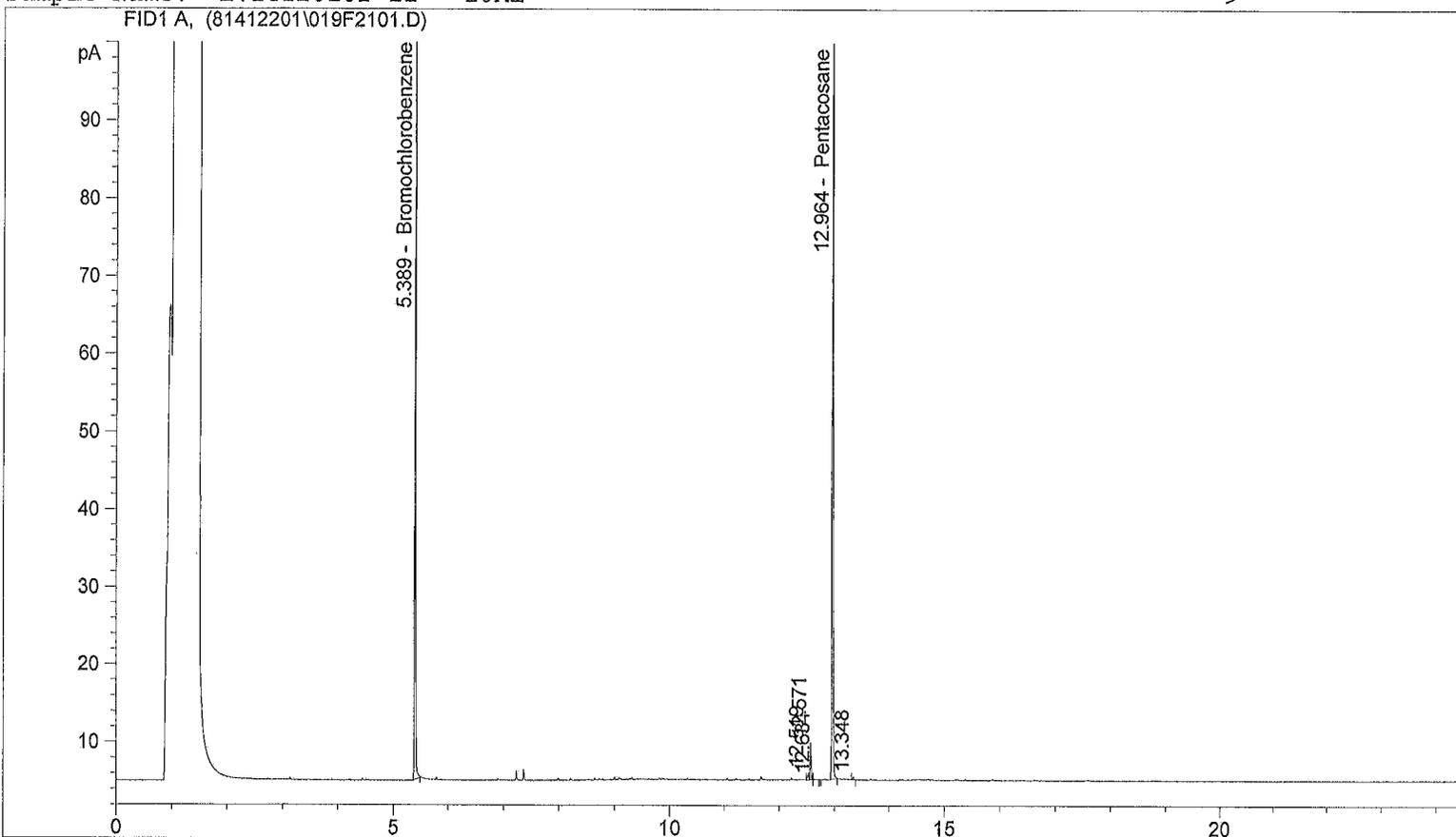
79%

07310 µg/L Unidentified Oil Range Product

12.22.14

Sample Name: EV14120162-11 10ML

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Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
5.389	FID1 A,	Bromochlorobenzene	117.941	20.404	82%
12.964		Pentacosane	149.358	7.583	76%

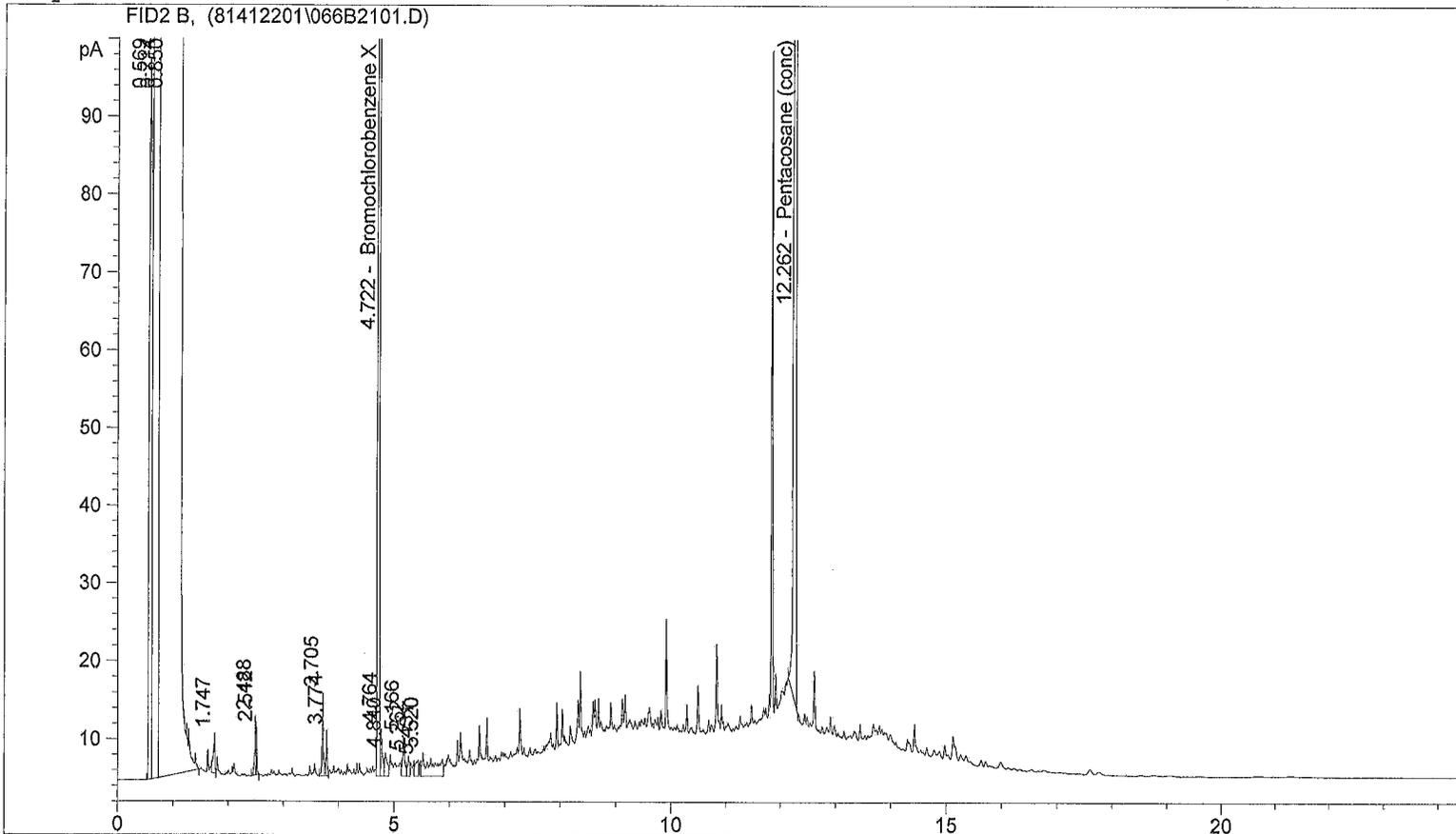
G < 130 µg/L
 D < 310 µg/L

RE: BY BS / 1/9/15

12.22.14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\066B2101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/20/2014 8:09:52 PM 12/20/2014 8:09:52 PM
 Report Creation: 12/21/2014 10:02:32 AM

Sample Name: EV14120162-11 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.722	FID2 B,	Bromochlorobenzene X	2649.756	206.310
12.262		Pentacosane (conc)	3145.420	81.638

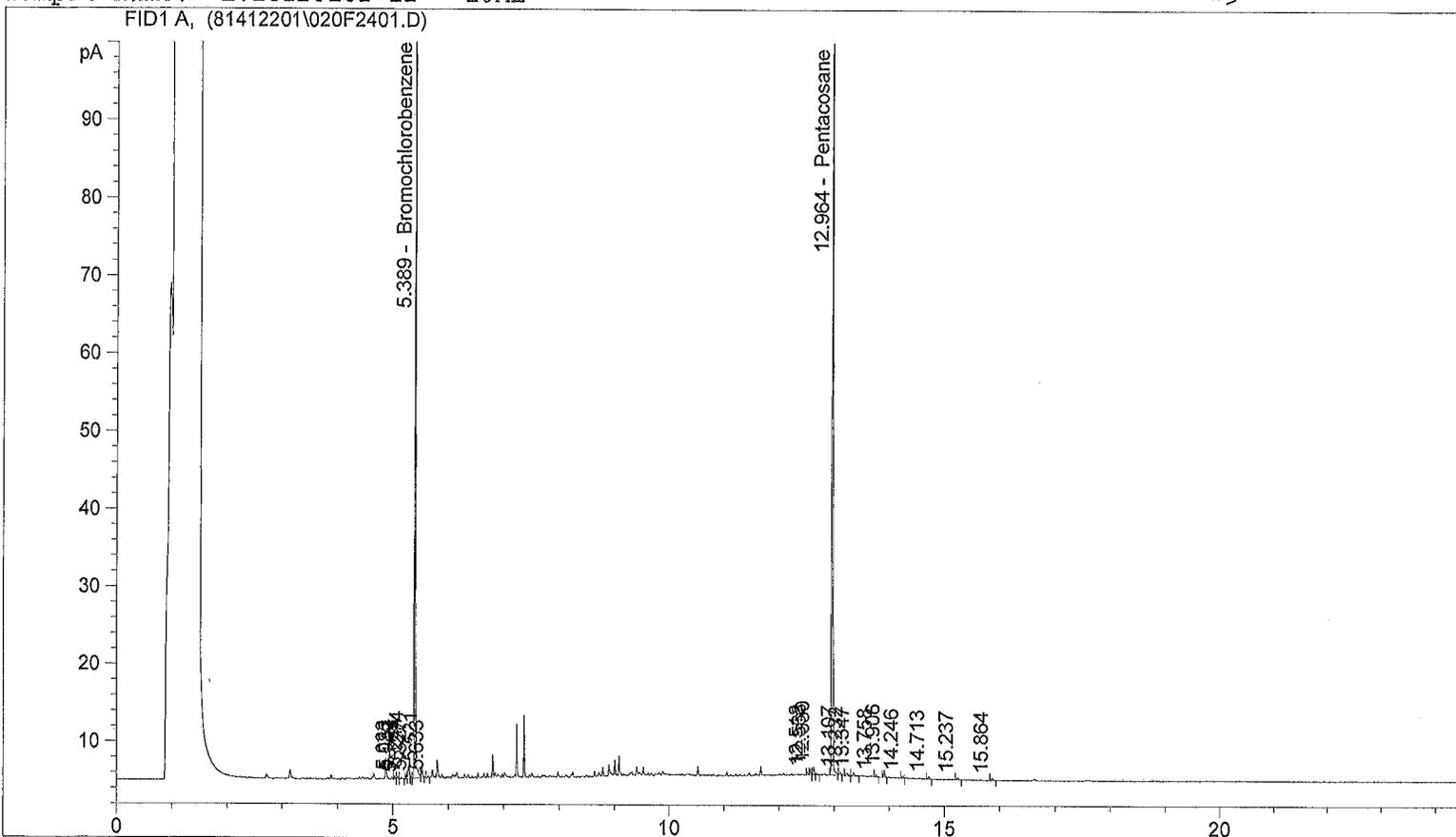
82%

0 < 310 mg/L

RE BY RB
 1/9/15

12-22-14 E

Sample Name: EV14120162-12 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.389	FID1 A,	Bromochlorobenzene	127.319	22.027
12.964		Pentacosane	154.852	7.861

88%
79%

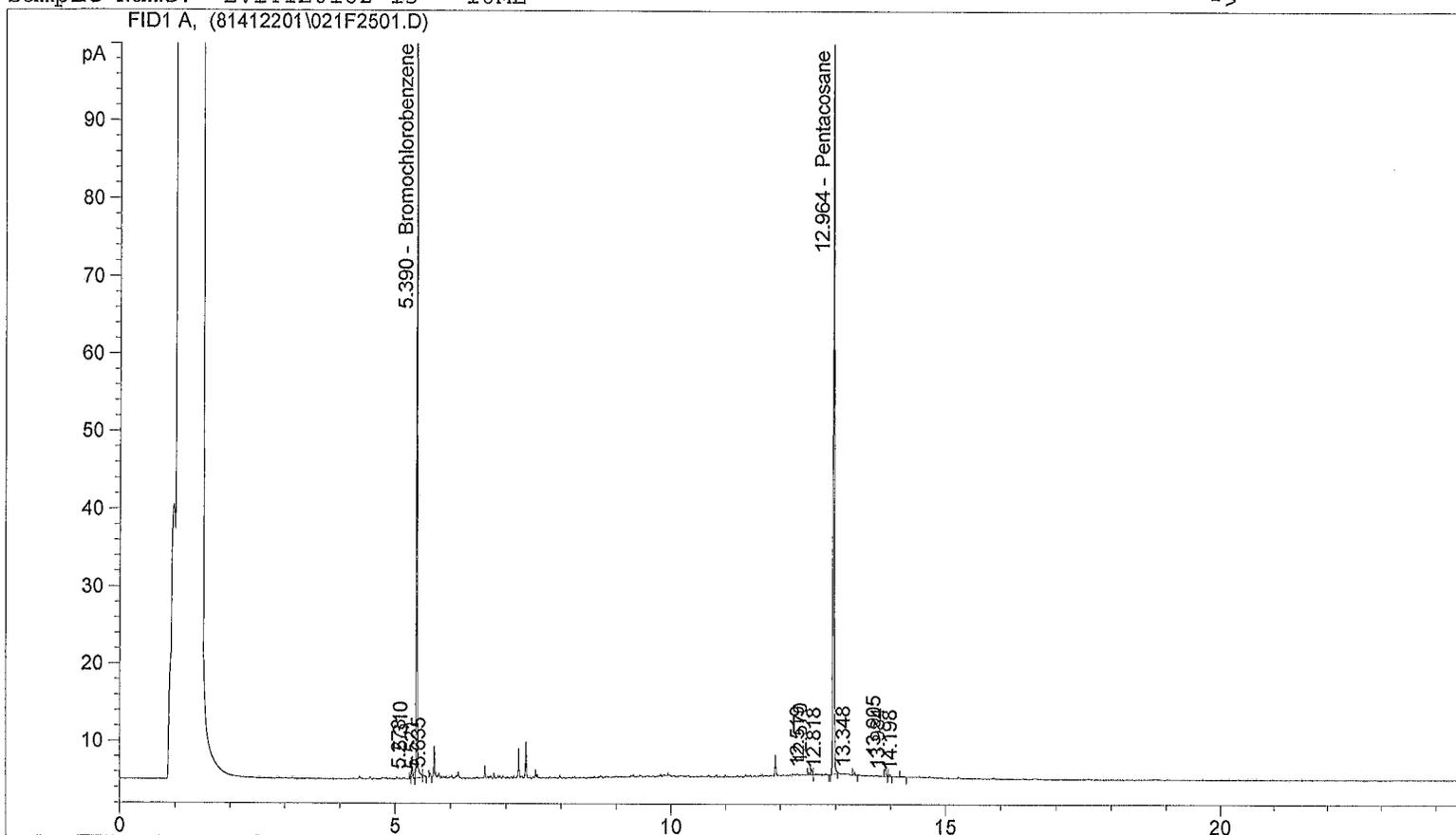
G < 130 ug/L
 D < 310 ug/L

REC BY *RS*
 1/9/15

12.22.14ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\021F2501.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 12/20/2014 10:27:47 PM 12/20/2014 10:27:47 PM
 Report Creation: 12/21/2014 10:13:56 AM

Sample Name: EV14120162-13 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.390	FID1 A,	Bromochlorobenzene	120.661	20.875
12.964		Pentacosane	147.719	7.499

84%
75%

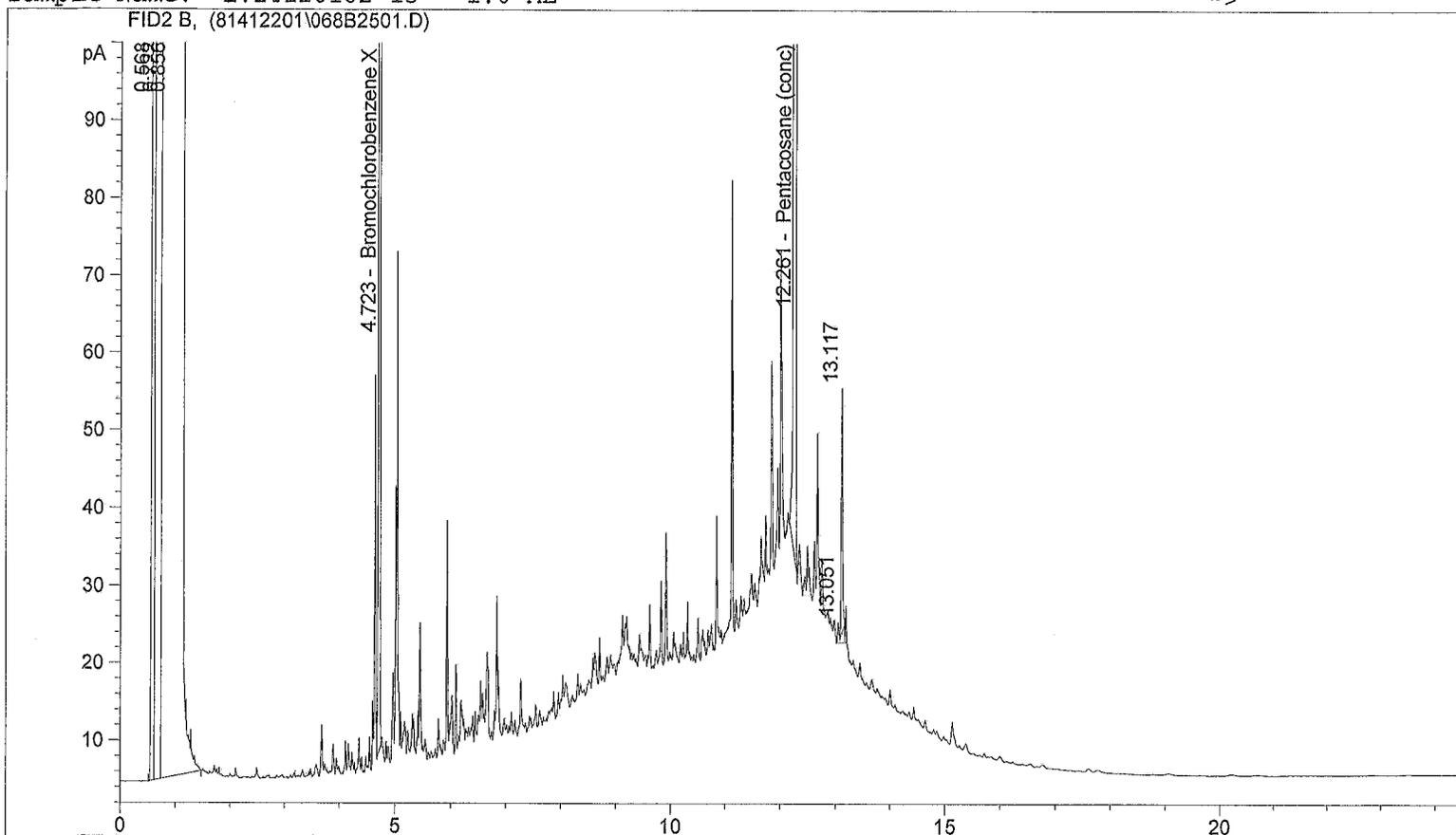
G < 130 µg/L
 D < 310 µg/L

RE BY MS
 1/9/15

12.22.14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\068B2501.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/20/2014 10:27:47 PM 12/20/2014 10:27:47 PM
 Report Creation: 12/21/2014 10:03:45 AM

Sample Name: EV14120162-13 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.723	FID2 B,	Bromochlorobenzene X	2681.236	208.761
12.261		Pentacosane (conc)	3047.101	79.086

79/

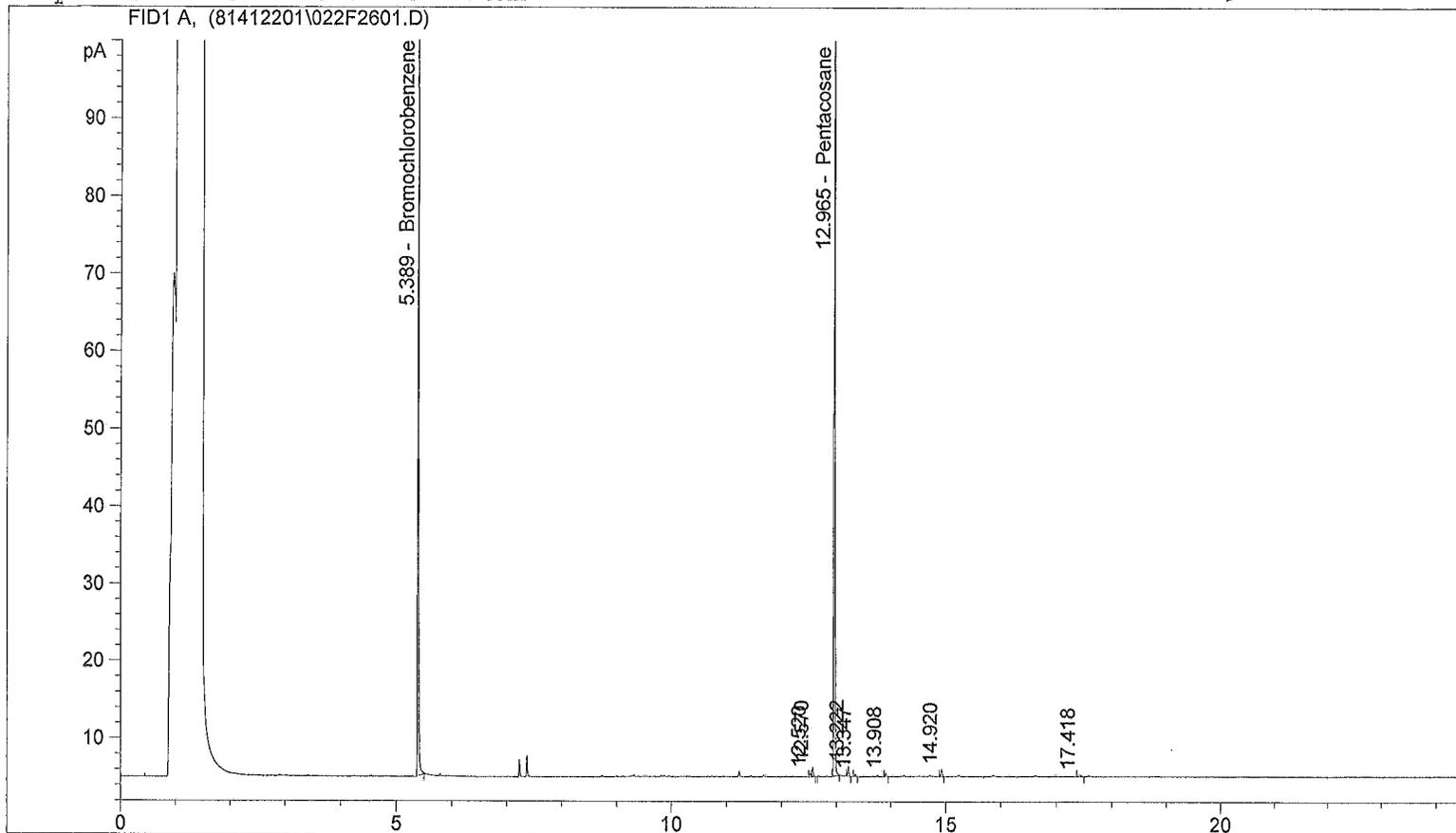
O > 310 µg/L Unidentified Oil Range Product

RE BY *MS*
 1/9/15

12.22.14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\022F2601.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 12/20/2014 11:02:12 PM 12/20/2014 11:02:12 PM
 Report Creation: 12/21/2014 10:14:10 AM

Sample Name: EV14120162-15 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.389	FID1 A,	Bromochlorobenzene	122.672	21.223
12.965		Pentacosane	143.166	7.268

85%
73%

G < 130 ug/L
 D < 310 ug/L

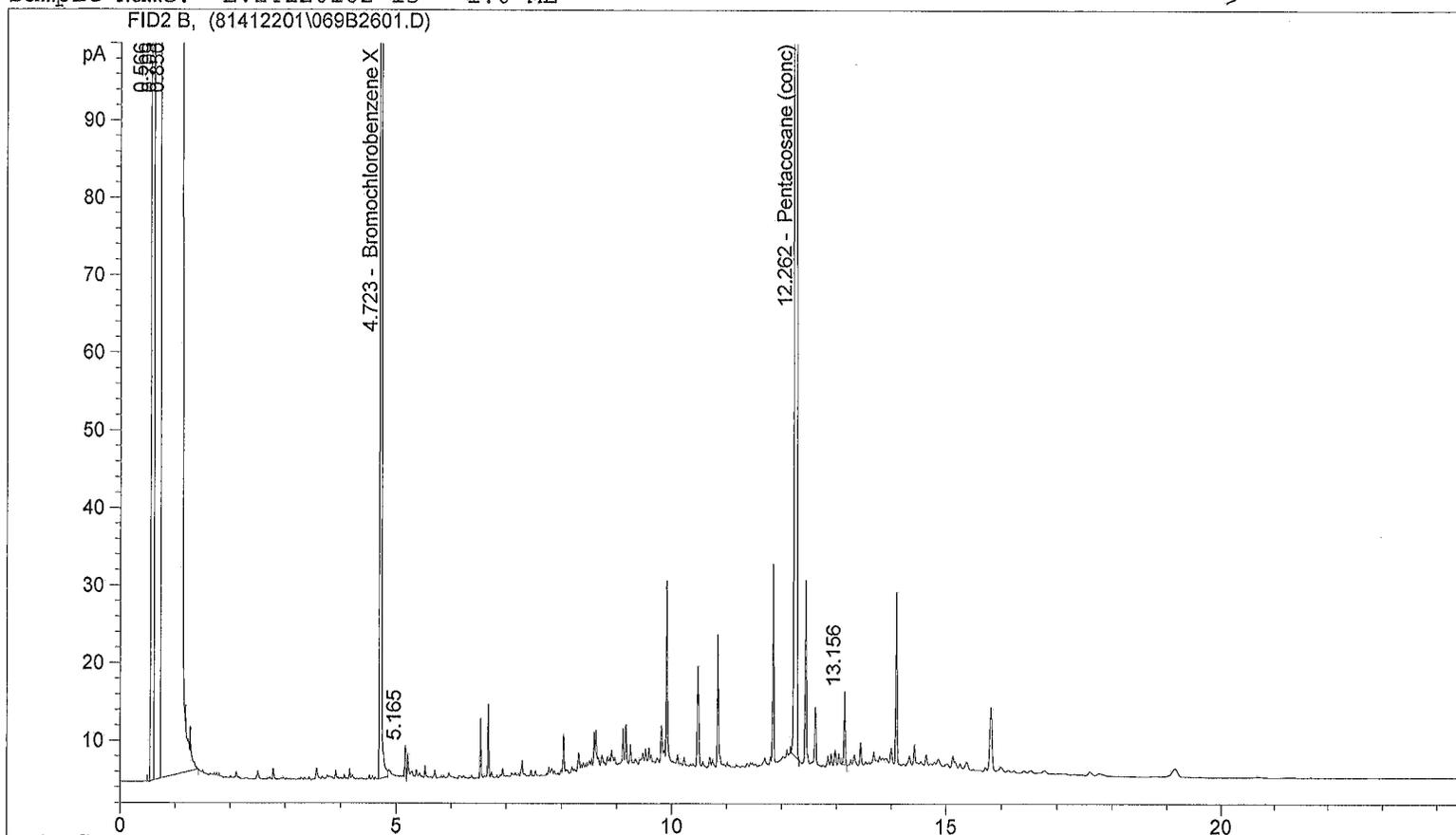
RE BY MS
 1/9/15

12.22.14ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\069B2601.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/20/2014 11:02:12 PM 12/20/2014 11:02:12 PM
 Report Creation: 12/21/2014 10:04:01 AM

Sample Name: EV14120162-15 1.0 ML

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Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.723	FID2 B,	Bromochlorobenzene X	2824.034	219.879
12.262		Pentacosane (conc)	3167.408	82.209

82%

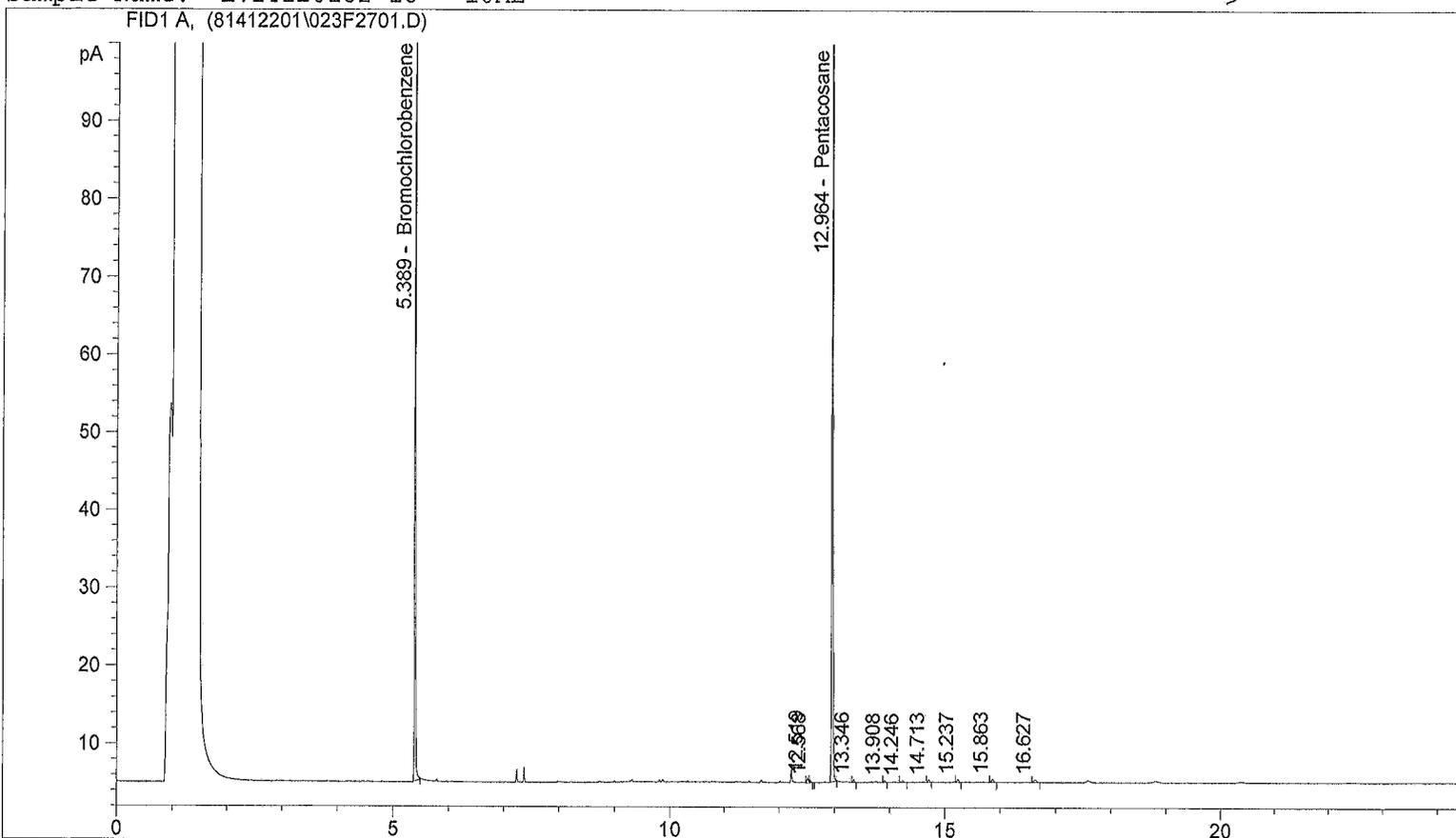
0 < 310 ug/L

RE BY *BS*
 1/9/15

12.22.14E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\023F2701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 12/20/2014 11:36:35 PM 12/20/2014 11:36:35 PM
 Report Creation: 12/21/2014 10:14:21 AM

Sample Name: EV14120162-16 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.389	FID1 A,	Bromochlorobenzene	142.290	24.617
12.964		Pentacosane	155.467	7.893

98%
79%

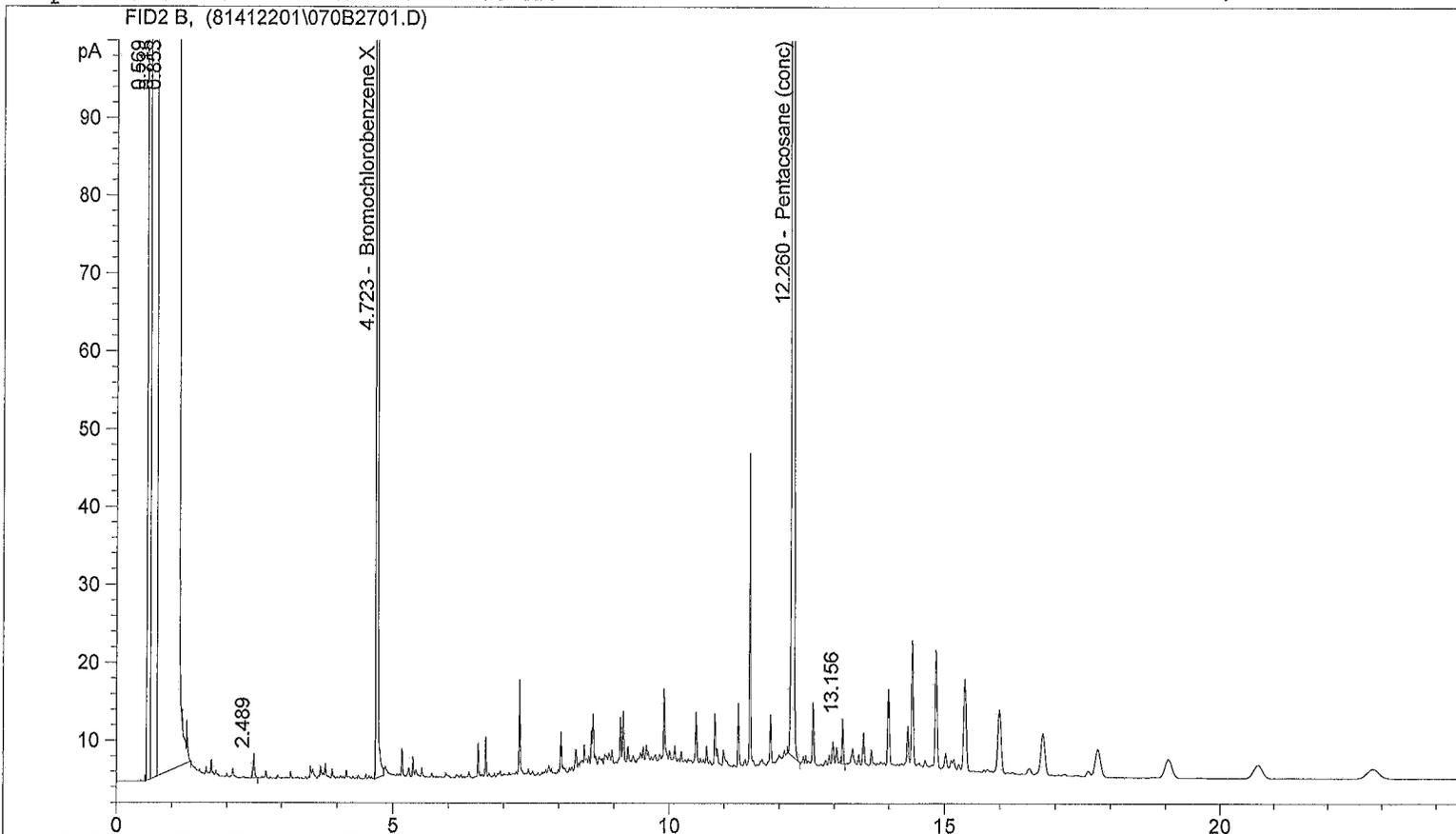
G < 130 ug/L
 D < 310 ug/L

RC BY B
 1/9/5

12.22.14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\070B2701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/20/2014 11:36:35 PM 12/20/2014 11:36:35 PM
 Report Creation: 12/21/2014 10:04:19 AM

Sample Name: EV14120162-16 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.723	FID2 B,	Bromochlorobenzene X	2911.480	226.688
12.260		Pentacosane (conc)	3069.536	79.668

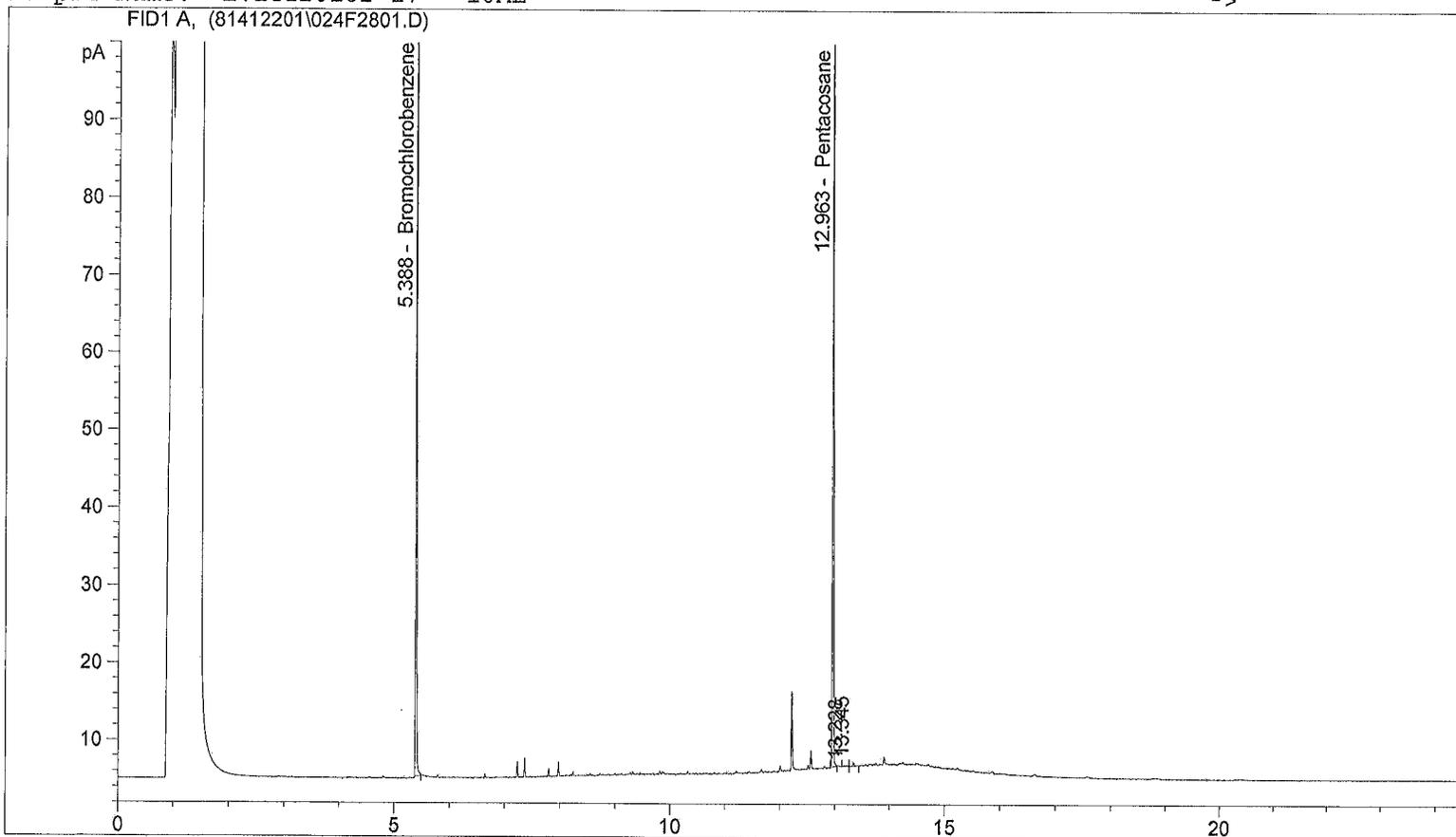
80%

0 < 310 µg/L

RC BY *MS*
 1/9/15

12.22.14

Sample Name: EV14120162-17 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.388	FID1 A,	Bromochlorobenzene	139.514	24.137
12.963		Pentacosane	145.539	7.389

97%
74%

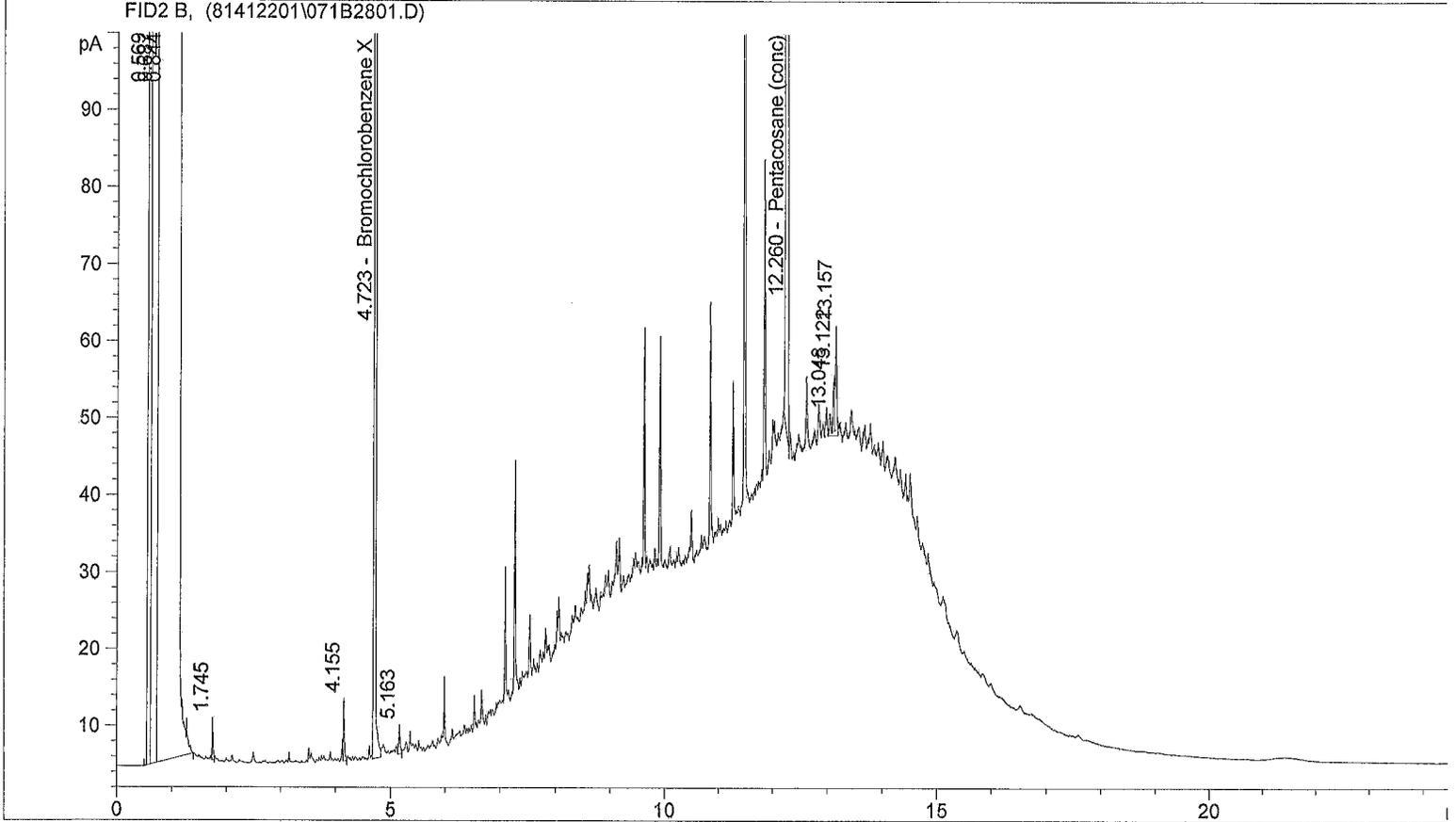
G < 130 ug/L
 D < 310 ug/L

RC BY NB
 1/9/15

12.22.14ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\071B2801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/21/2014 12:10:57 AM 12/21/2014 12:10:57 AM
 Report Creation: 12/21/2014 10:04:50 AM

Sample Name: EV14120162-17 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.723	FID2 B,	Bromochlorobenzene X	2950.696	229.741
12.260		Pentacosane (conc)	2808.205	72.886

73%

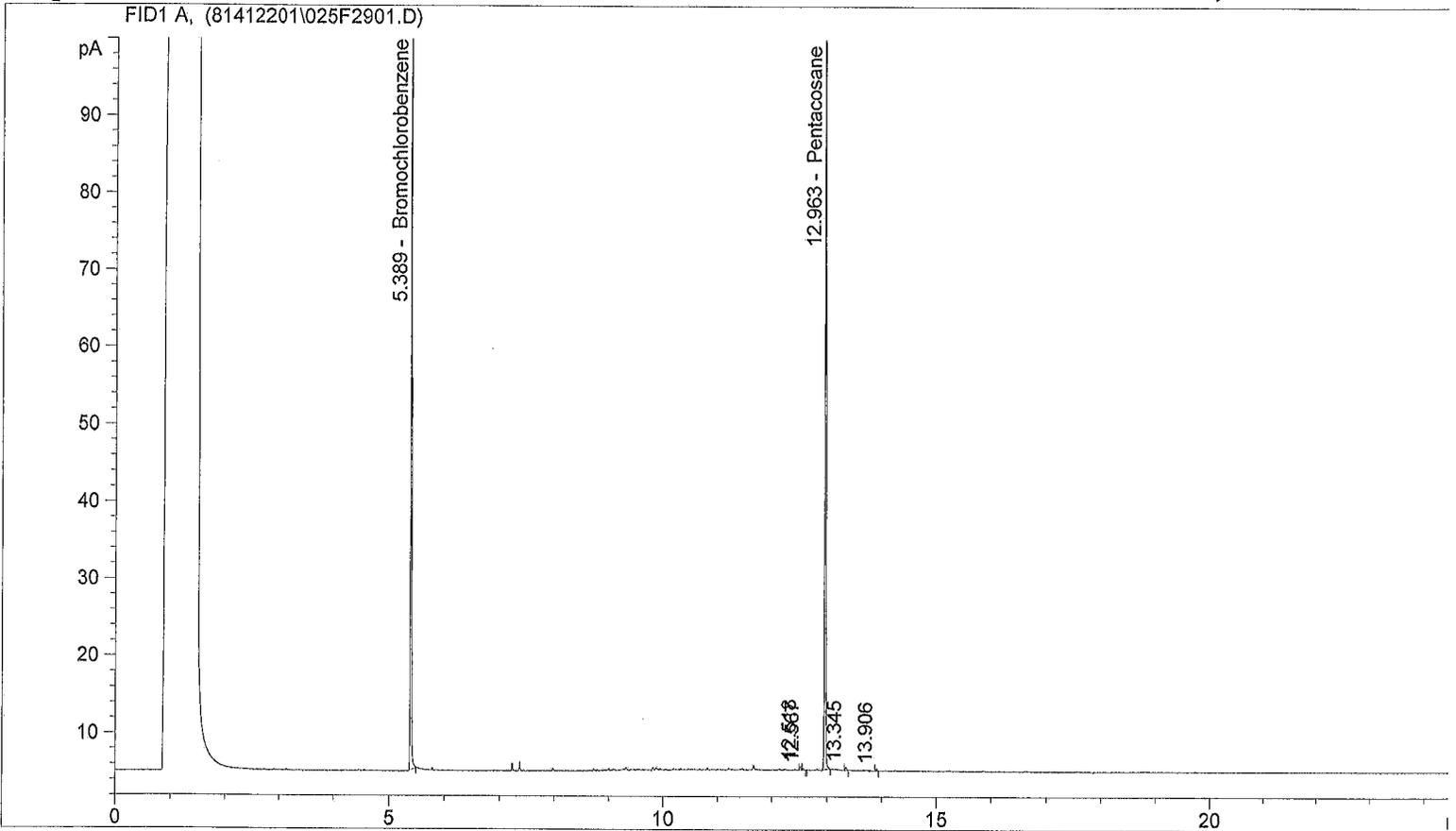
0 > 310 µg/L Unidentified Oil Range Product

RE BY MB
 1/9/15

12.22.14E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\025F2901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 12/21/2014 12:45:16 AM 12/21/2014 12:45:16 AM
 Report Creation: 12/21/2014 10:14:48 AM

Sample Name: EV14120162-18 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.389	FID1 A,	Bromochlorobenzene	150.524	26.041
12.963		Pentacosane	161.012	8.174

104/
82/

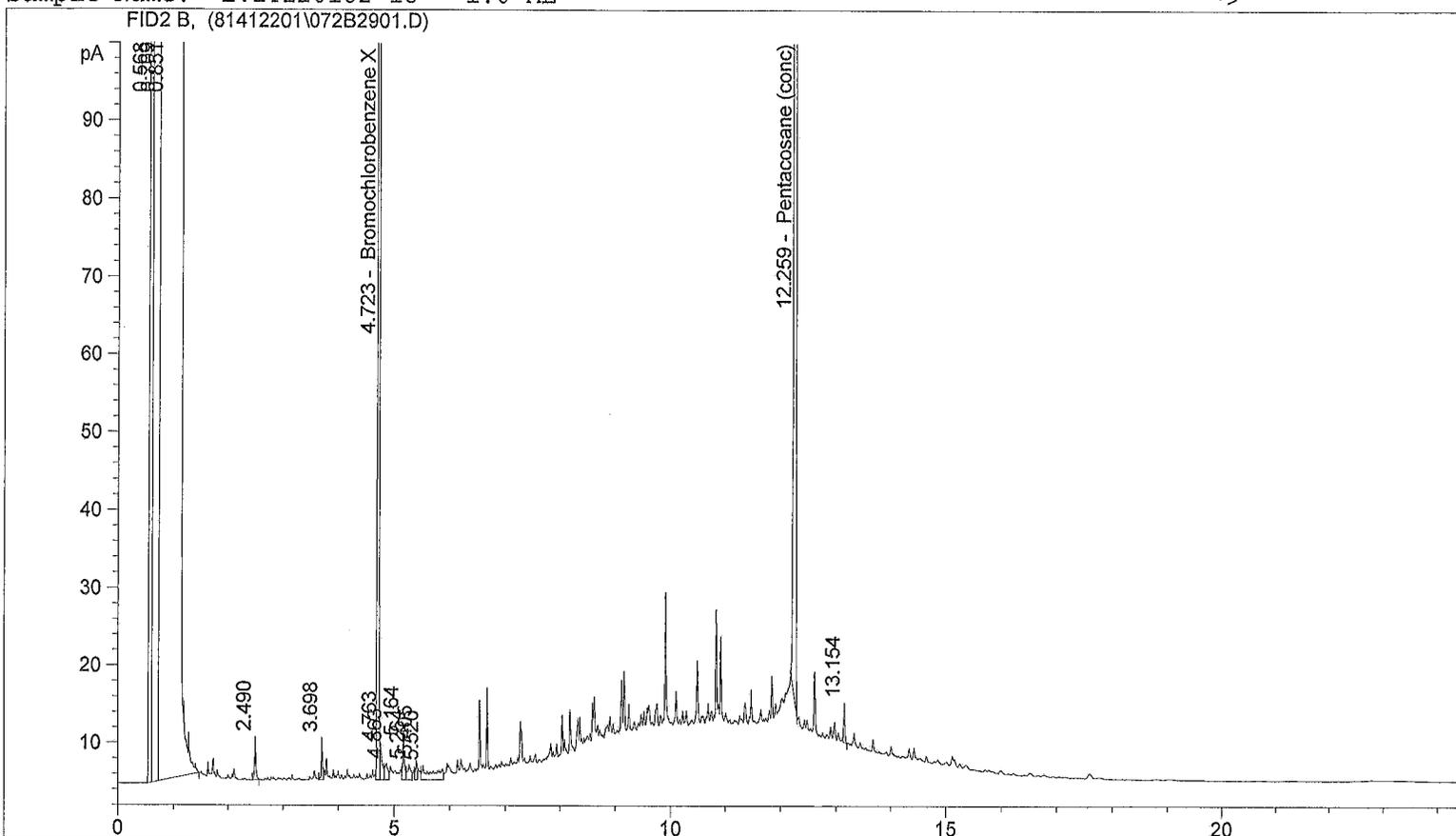
G < 100 ug/L
D < 310 ug/L

RE BY 12/15

12-22-14 ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\072B2901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/21/2014 12:45:16 AM 12/21/2014 12:45:16 AM
 Report Creation: 12/21/2014 10:05:06 AM

Sample Name: EV14120162-18 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.723	FID2 B,	Bromochlorobenzene X	2846.615	221.637
12.259		Pentacosane (conc)	2929.956	76.046

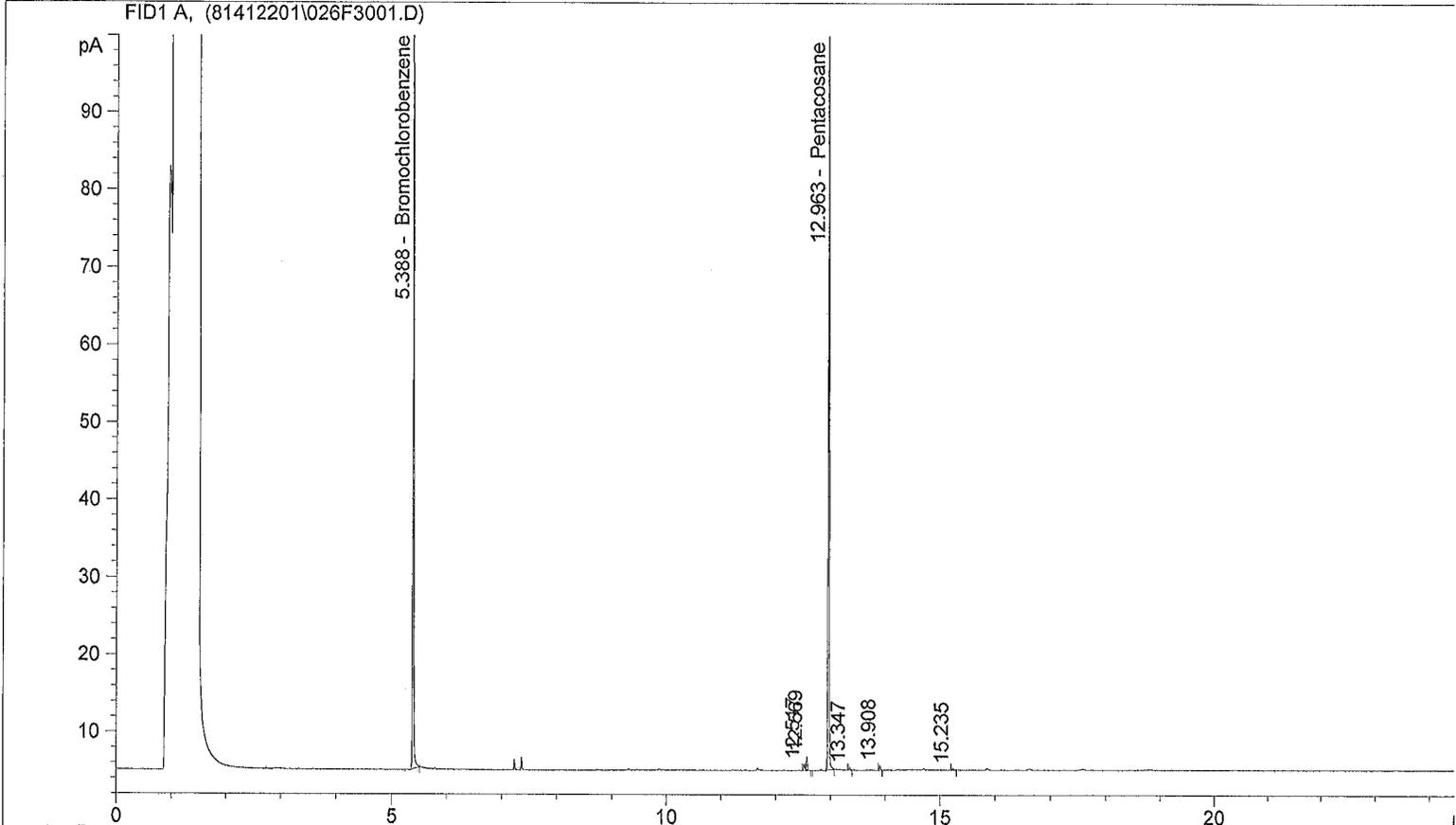
76/

0 < 310 ng/L

RE BY RA
 1/9/15

12.22.14

Sample Name: EV14120162-19 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.388	FID1 A,	Bromochlorobenzene	139.107	24.066
12.963		Pentacosane	143.729	7.297

96%
73%

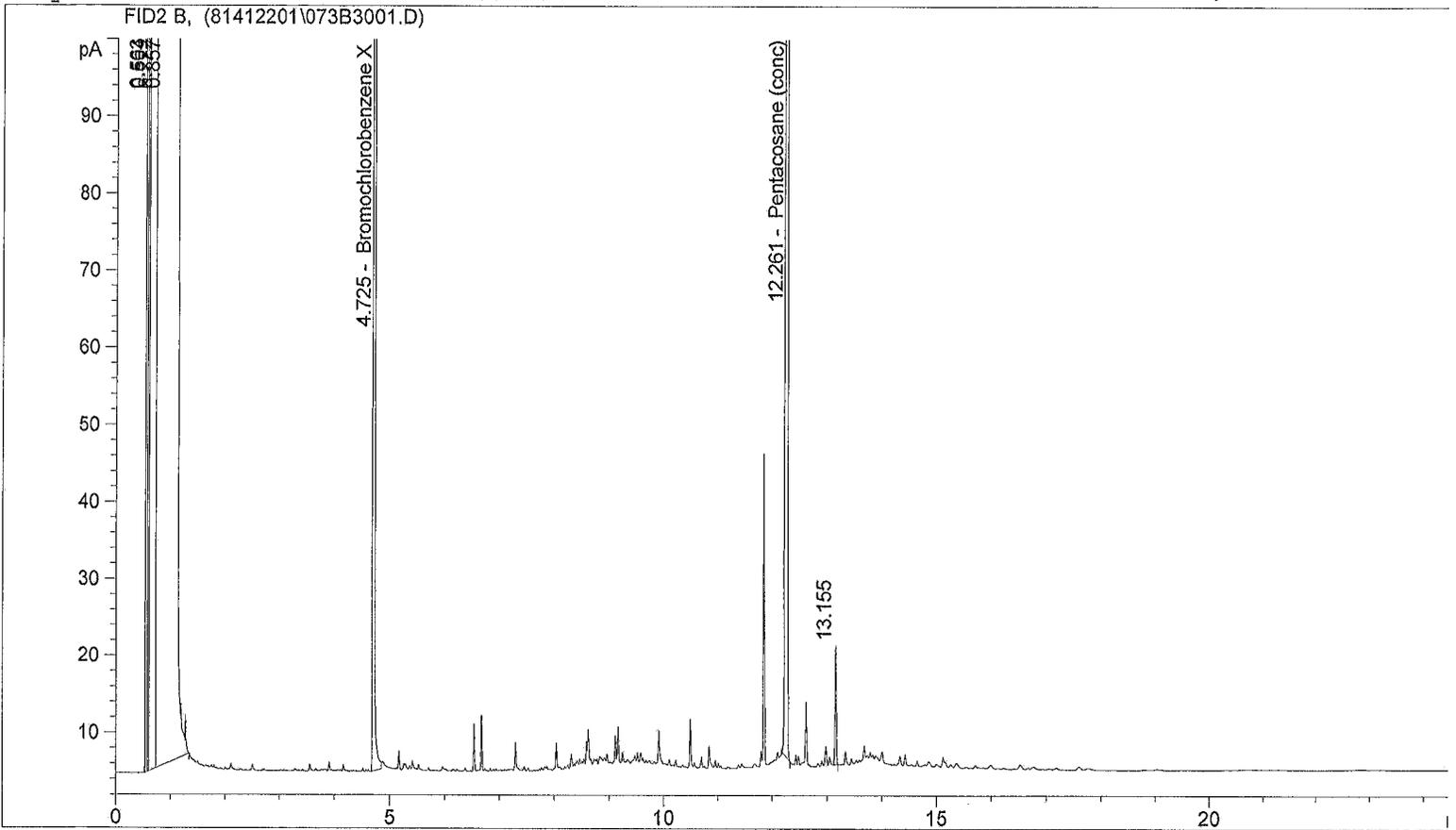
G < 130 ug/L
 D < 310 ug/L

RL BY MB
 1/1/15

12.22.14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\073B3001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/21/2014 1:19:38 AM 12/21/2014 1:19:38 AM
 Report Creation: 12/21/2014 10:05:22 AM

Sample Name: EV14120162-19 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.725	FID2 B,	Bromochlorobenzene X	3282.986	255.613
12.261		Pentacosane (conc)	3305.846	85.802

86%

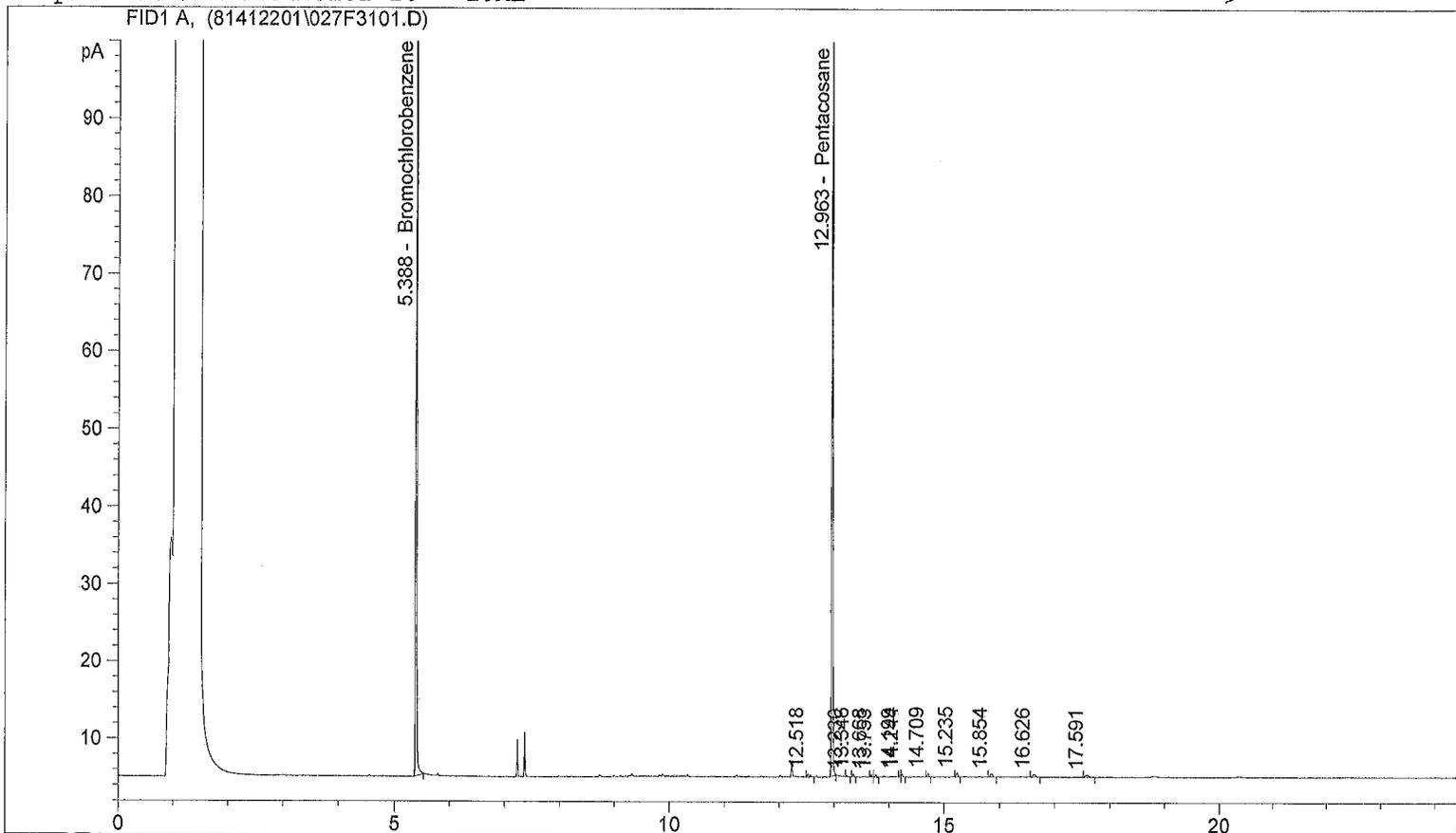
0 < 310 ug/L

REC BY *B*
 1/9/15

12-22-14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\027F3101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 12/21/2014 1:53:52 AM 12/21/2014 1:53:52 AM
 Report Creation: 12/21/2014 10:15:09 AM

Sample Name: EV14120162-20 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.388	FID1 A,	Bromochlorobenzene	180.023	31.145
12.963		Pentacosane	182.580	9.269

125%
93%

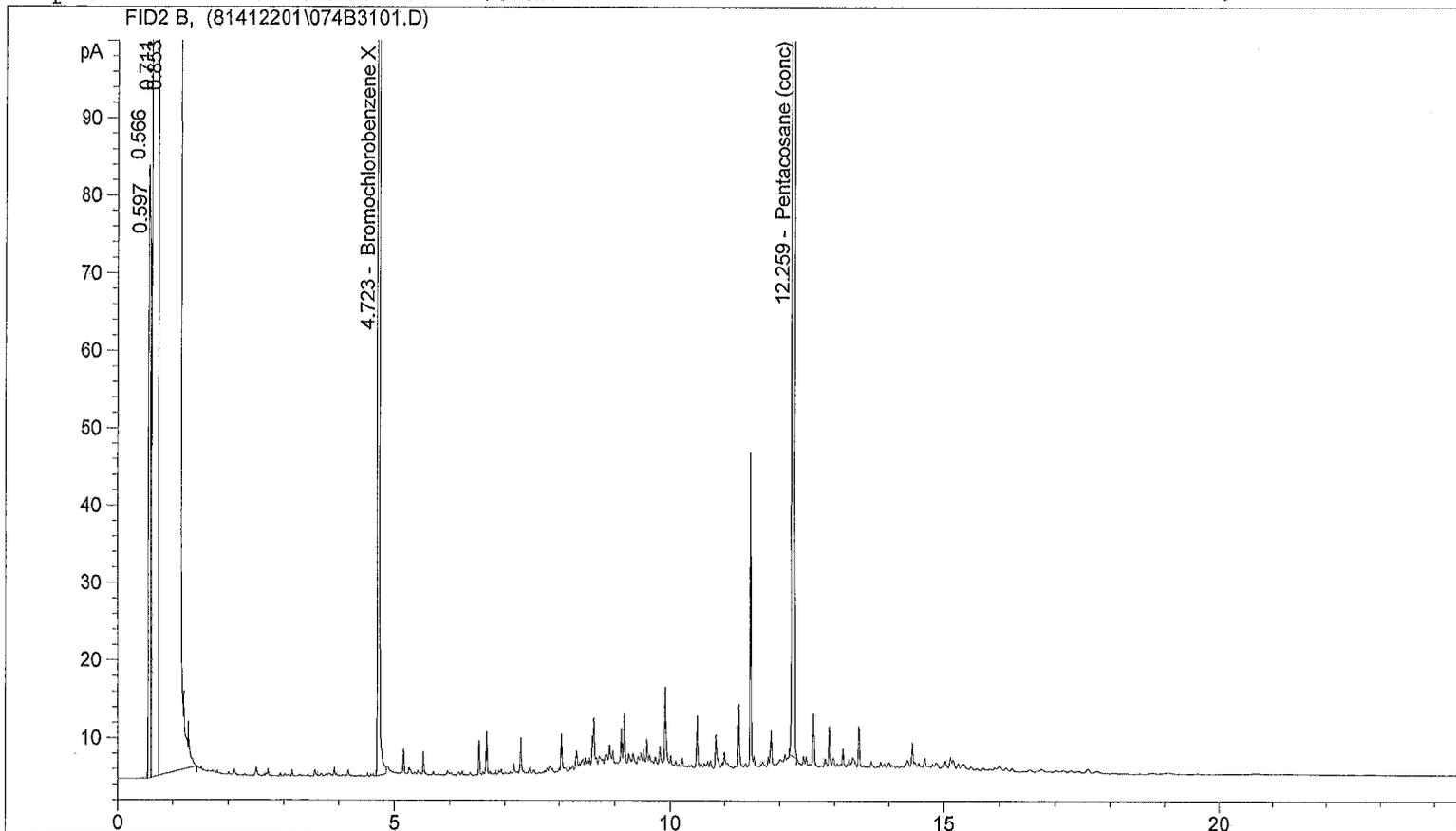
G < 130 µg/L
 D < 310 µg/L

RE BY *EBS*
 1/9/15

12-22-14 EBS

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\074B3101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/21/2014 1:53:52 AM 12/21/2014 1:53:52 AM
 Report Creation: 12/21/2014 10:05:38 AM

Sample Name: EV14120162-20 1.0 ML ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.723	FID2 B,	Bromochlorobenzene X	3004.342	233.918
12.259		Pentacosane (conc)	2969.612	77.075

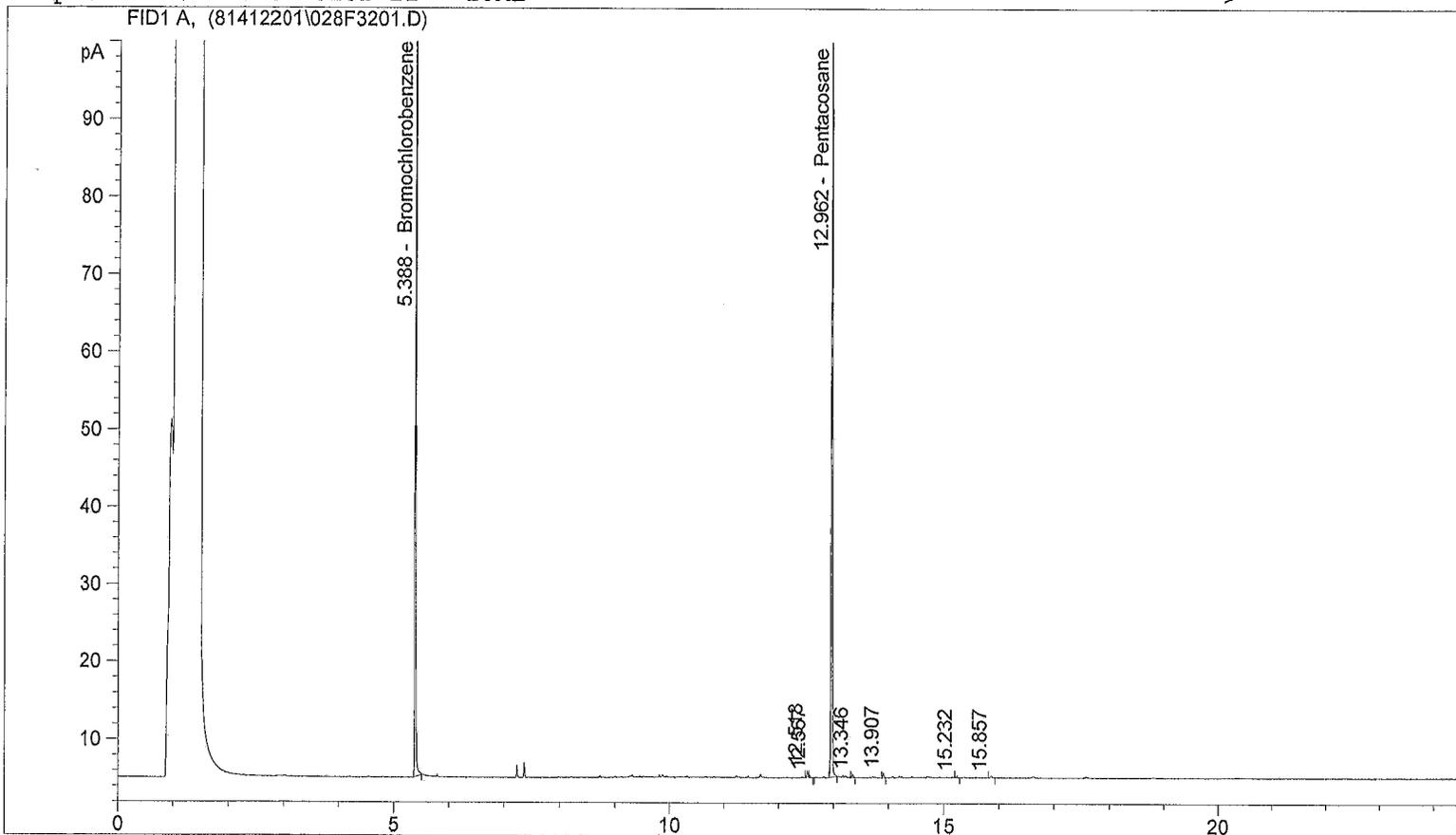
77 f.

O < 310 µg/L

RE BY *BS*
1/9/15

12.22.14 EBS

Sample Name: EV14120162-21 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.388	FID1 A,	Bromochlorobenzene	153.460	26.549
12.962		Pentacosane	157.819	8.012

106%
80%

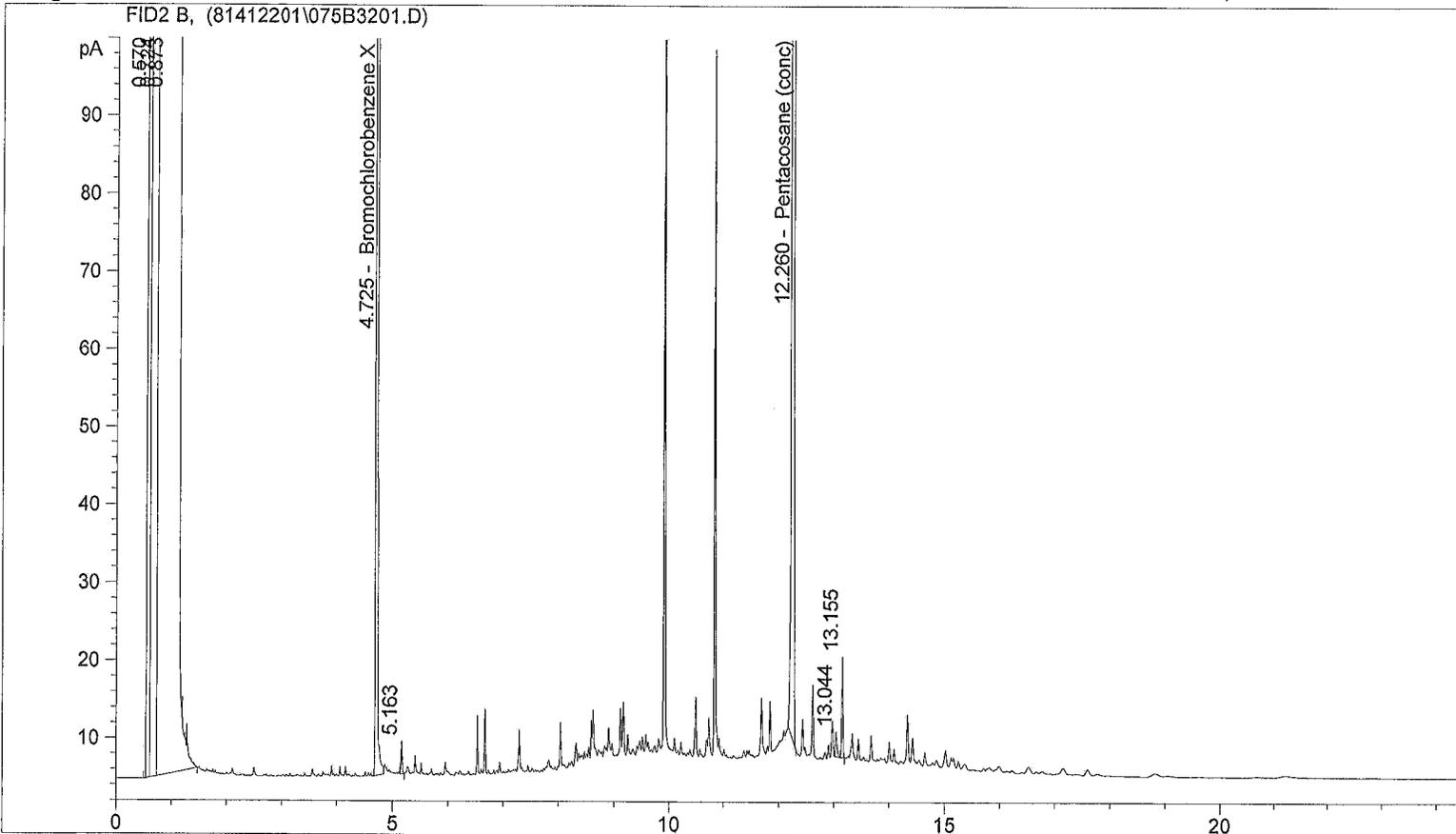
G < 130 mg/L
D < 310 mg/L

RE BY *MB*
1/9/15

12-22-14ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\075B3201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/21/2014 2:28:09 AM 12/21/2014 2:28:09 AM
 Report Creation: 12/21/2014 10:05:54 AM

Sample Name: EV14120162-21 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.725	FID2 B,	Bromochlorobenzene X	3279.928	255.375
12.260		Pentacosane (conc)	3260.598	84.627

85%

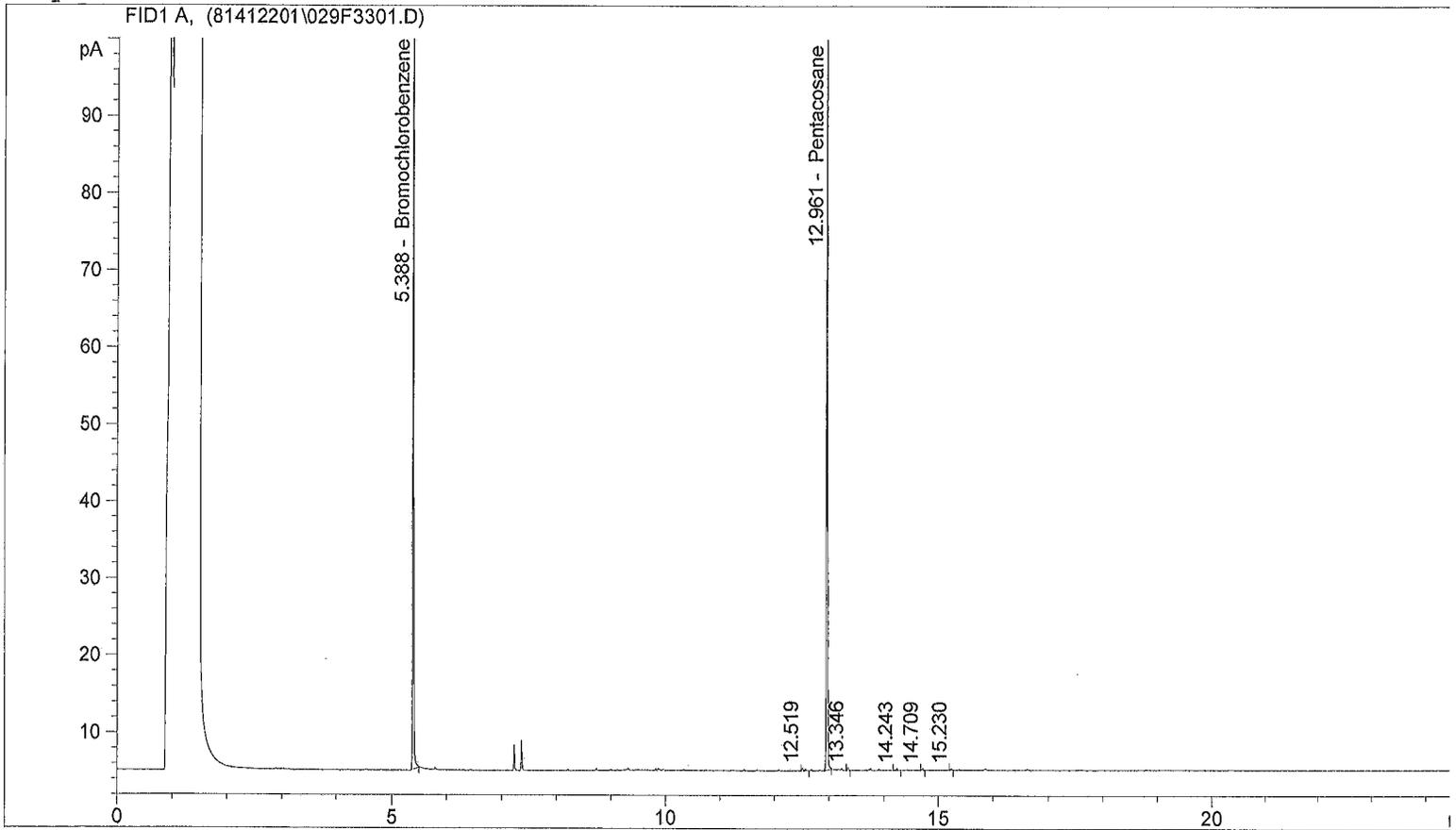
0 < 310 mg/L

RC BY *MB*
 1/9/15

12-22-14

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\029F3301.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 12/21/2014 3:02:21 AM 12/21/2014 3:02:21 AM
 Report Creation: 12/21/2014 10:15:35 AM

Sample Name: EV14120162-22 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.388	FID1 A,	Bromochlorobenzene	133.928	23.170
12.961		Pentacosane	142.938	7.257

93%
73%

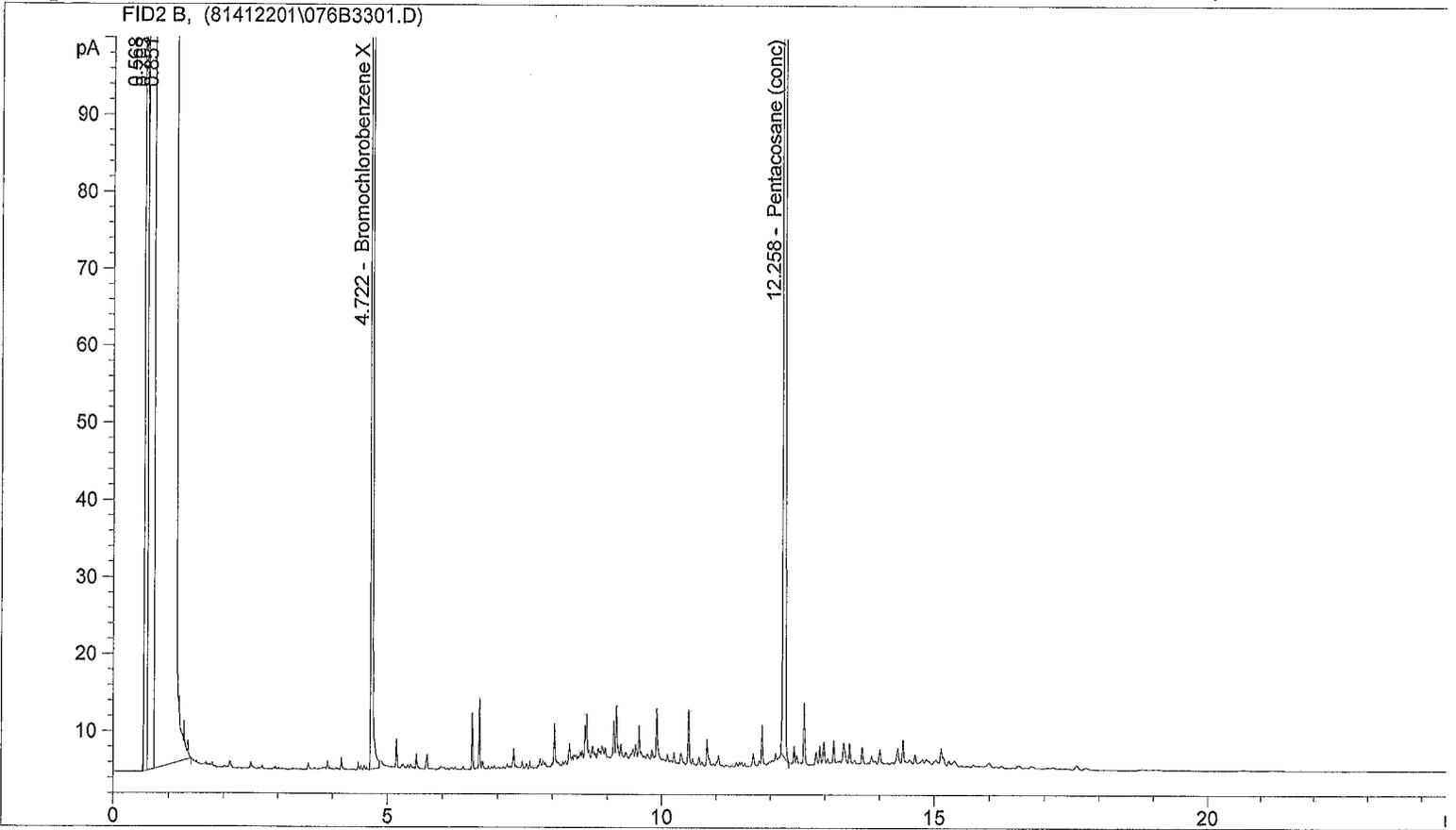
G < 130 ug/L
 D < 310 ug/L

RE BY: *RB*
 1/9/15

12.21.14 ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\076B3301.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/21/2014 3:02:21 AM 12/21/2014 3:02:21 AM
 Report Creation: 12/21/2014 10:06:10 AM

Sample Name: EV14120162-22 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.722	FID2 B,	Bromochlorobenzene X	2989.435	232.757
12.258		Pentacosane (conc)	3091.430	80.237

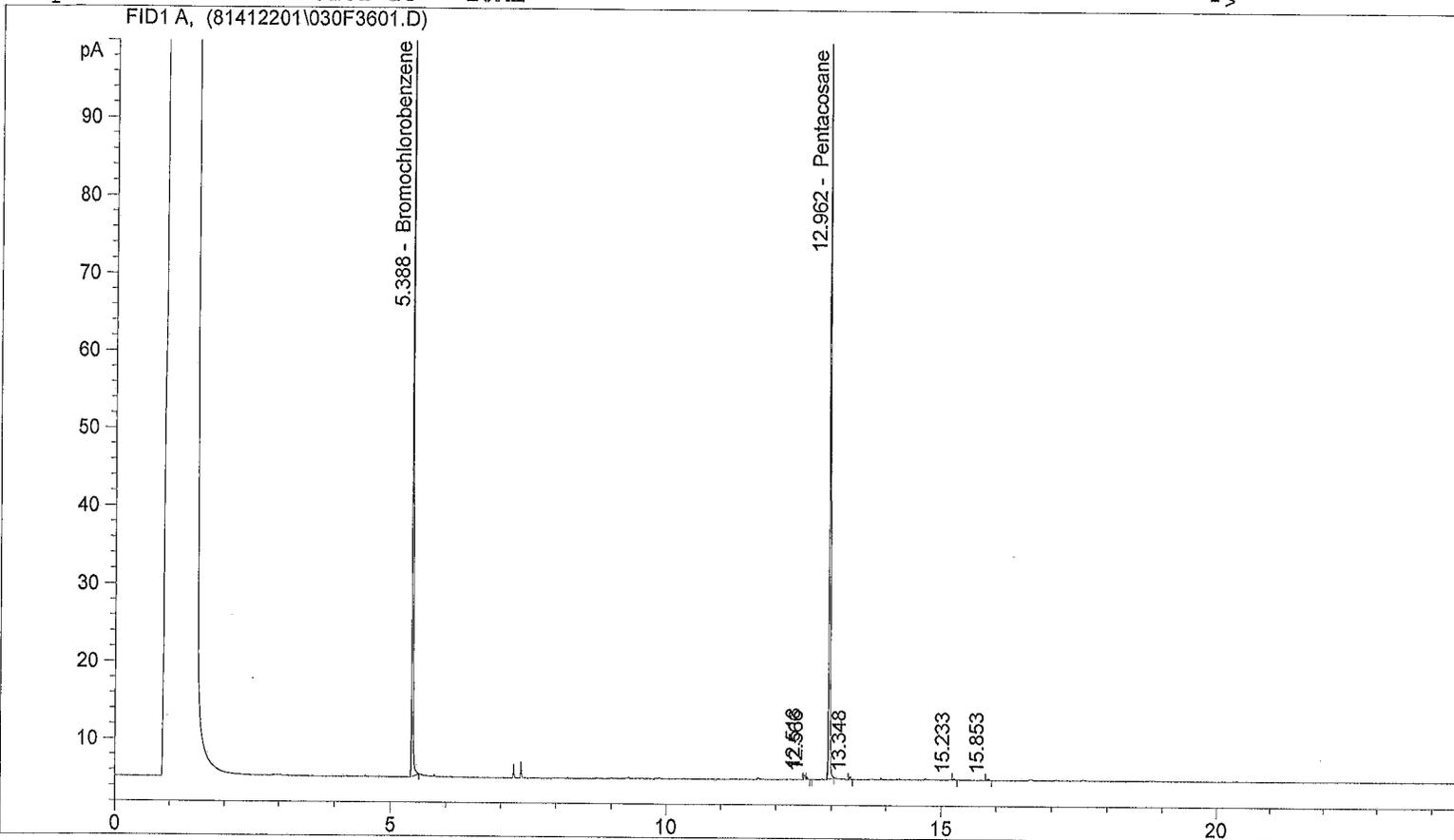
80%

0 < 310 ug/L

RE BY *BJ*
 1/9/15

12-22-14

Sample Name: EV14120162-23 10ML



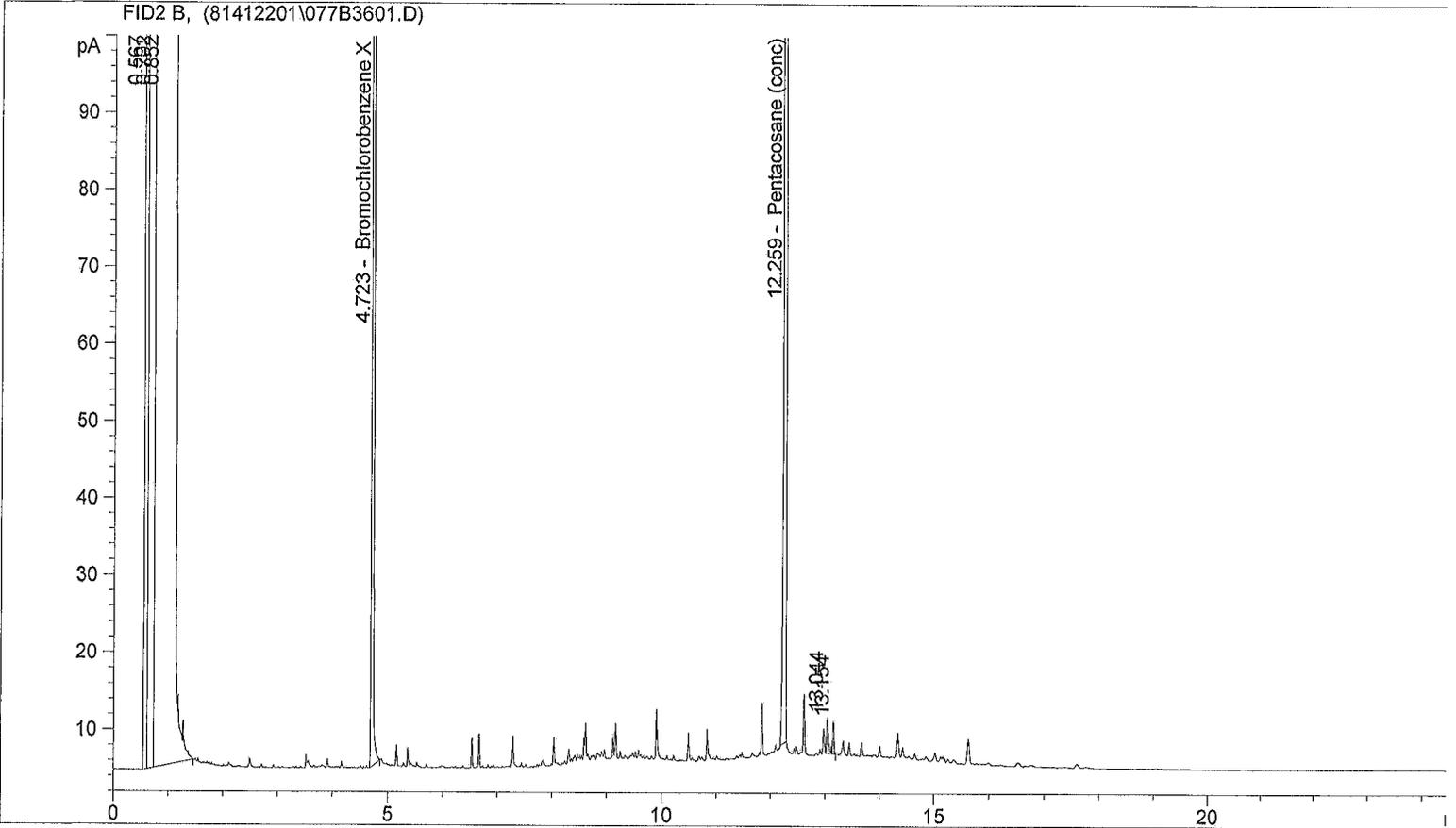
Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
5.388	FID1 A,	Bromochlorobenzene	146.775	25.393	102%
12.962		Pentacosane	151.023	7.667	77%

G < 130 µg/L
 D < 310 µg/L

RE BY MS
 1/9/15

12.22.14ES

Sample Name: EV14120162-23 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.723	FID2 B,	Bromochlorobenzene X	3096.152	241.066
12.259		Pentacosane (conc)	3130.838	81.260

81%

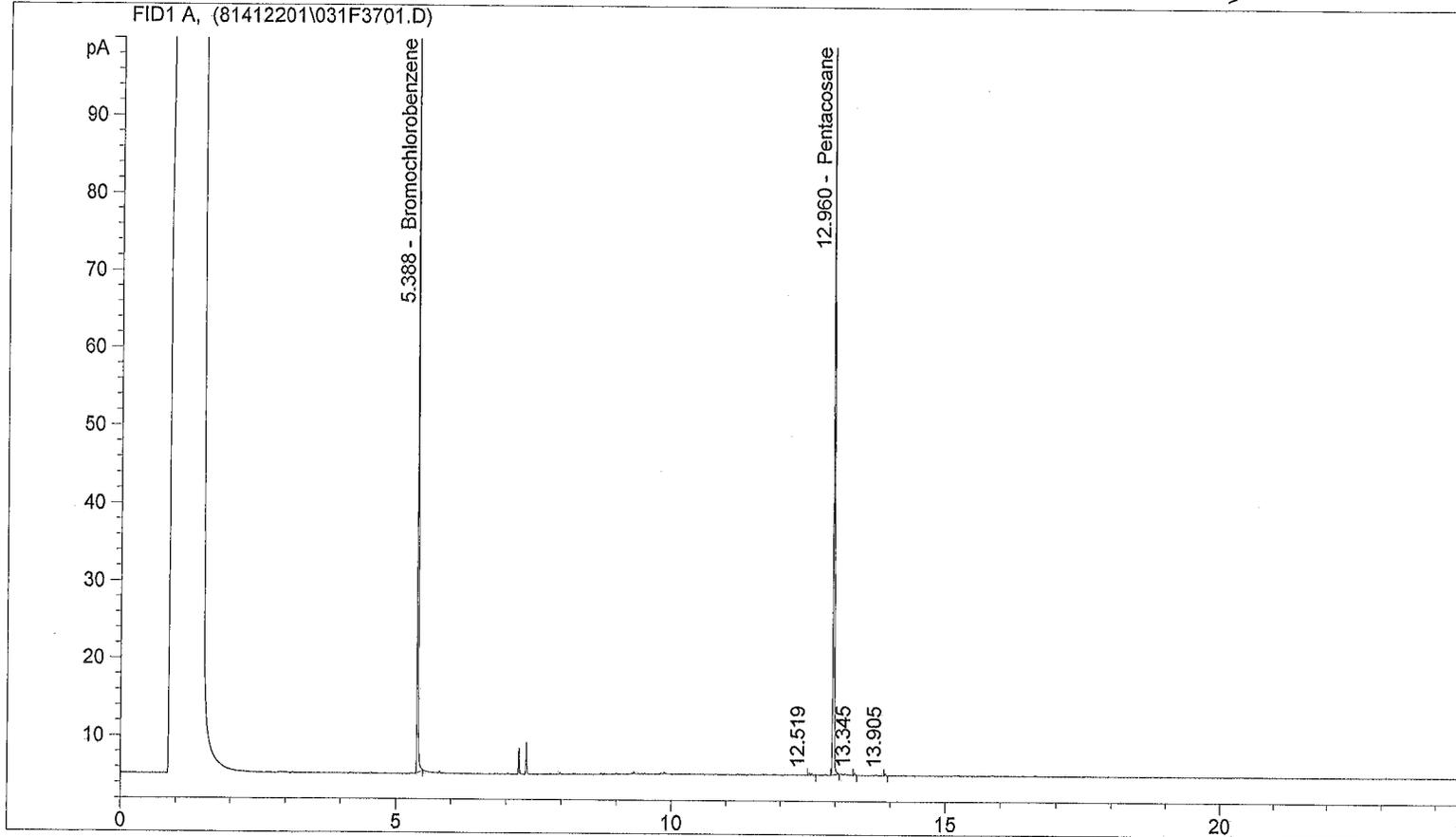
0 < 310 ug/L

RE BY *RS*
 1/9/15

12.22.14E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\031F3701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCLDW.M
 Injection Date & Time: 12/21/2014 5:18:46 AM 12/21/2014 5:18:46 AM
 Report Creation: 12/21/2014 10:15:58 AM

Sample Name: EV14120162-24 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
5.388	FID1 A,	Bromochlorobenzene	123.817	21.421	86%
12.960		Pentacosane	130.404	6.620	66%

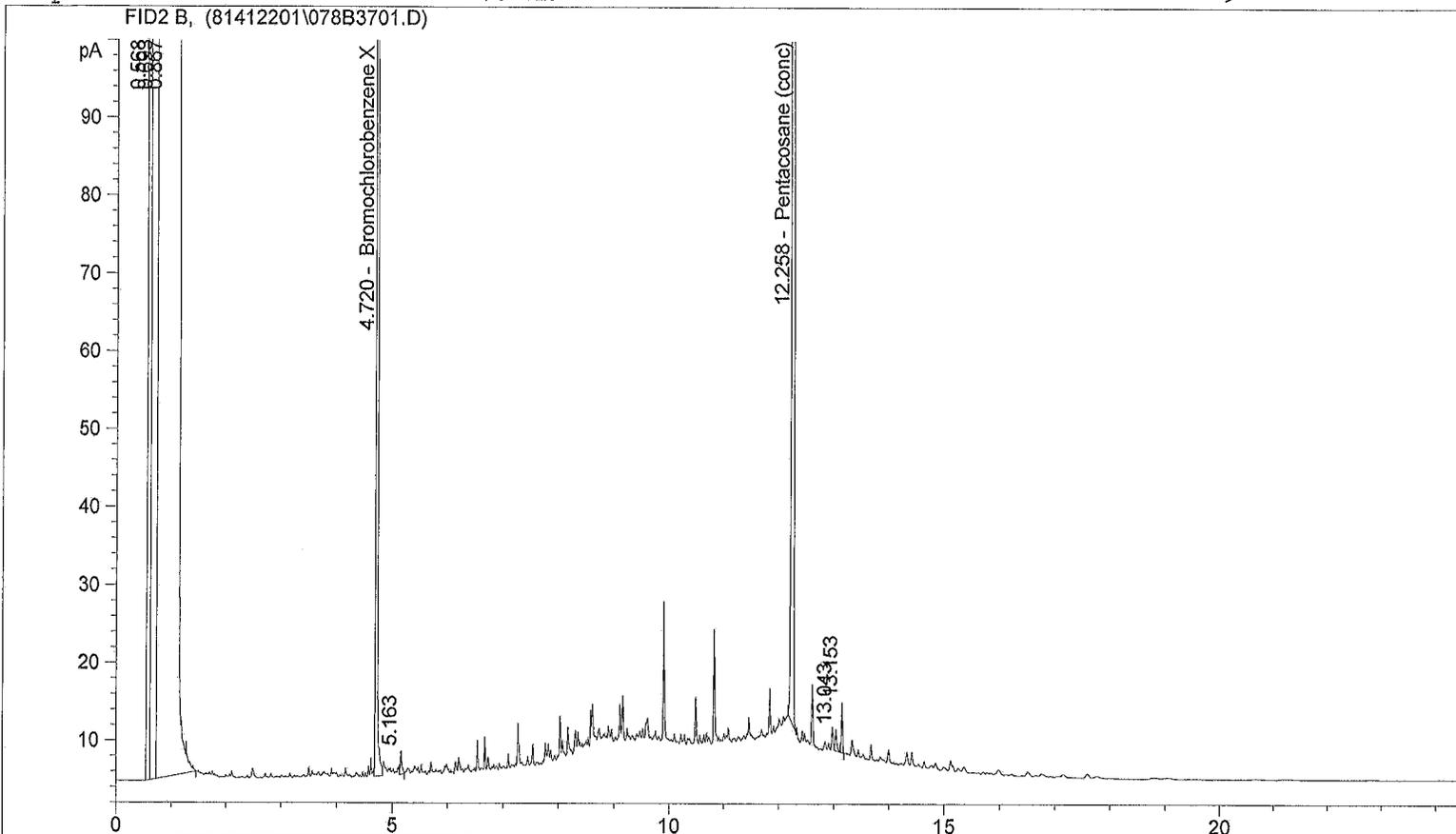
G < 130 µg/L
 D < 310 µg/L

RE BY RB
 1/9/15

12.22.14 ES

Sample Name: EV14120162-24 1.0 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.720	FID2 B,	Bromochlorobenzene X	2637.673	205.369
12.258		Pentacosane (conc)	2944.361	76.420

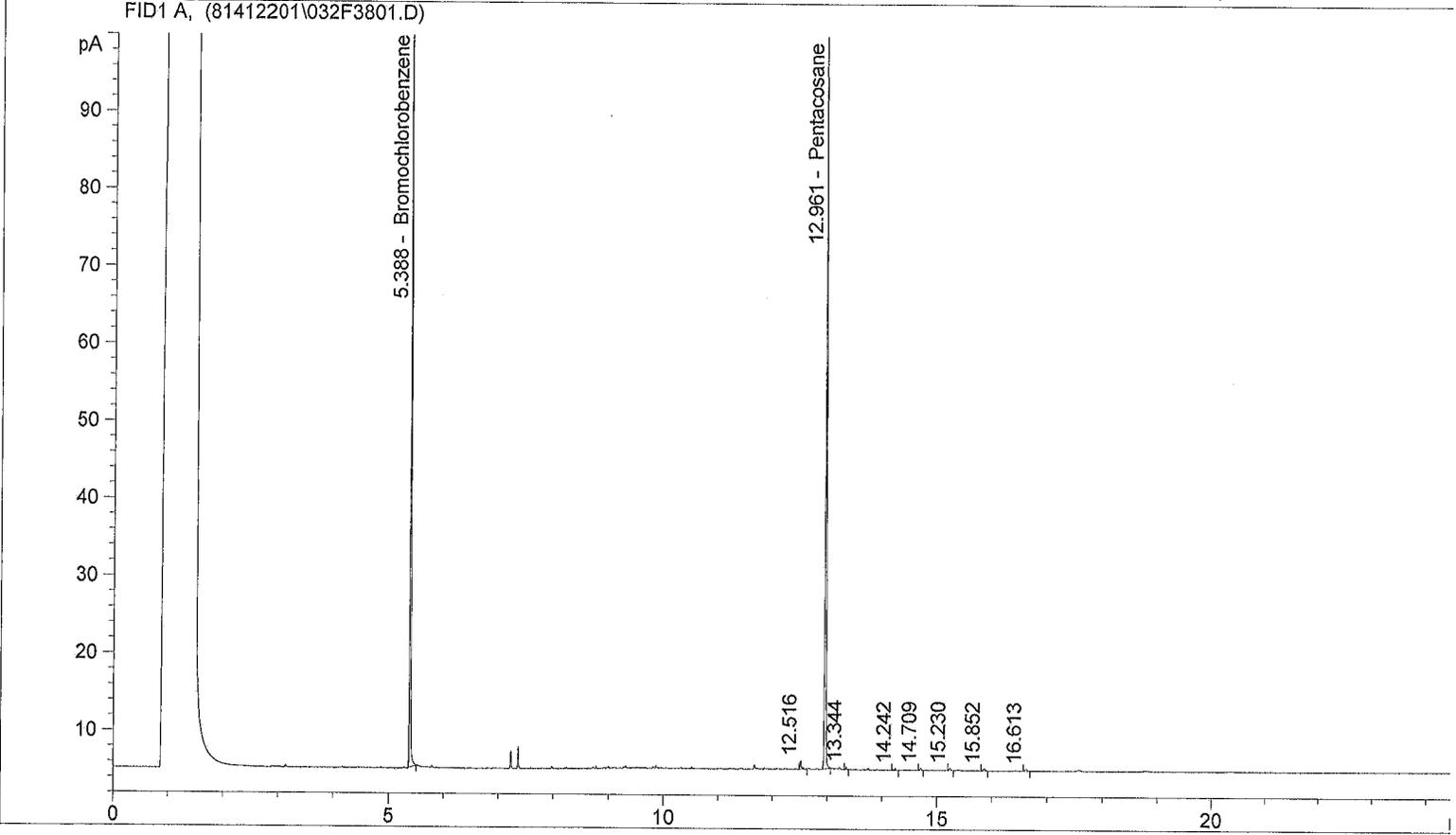
76%

0 < 310 ug/L

RE BY RB
 1/9/15

12-22-14 EBS

Sample Name: EV14120162-25 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.388	FID1 A,	Bromochlorobenzene	126.655	21.912
12.961		Pentacosane	132.493	6.726

88%
67%

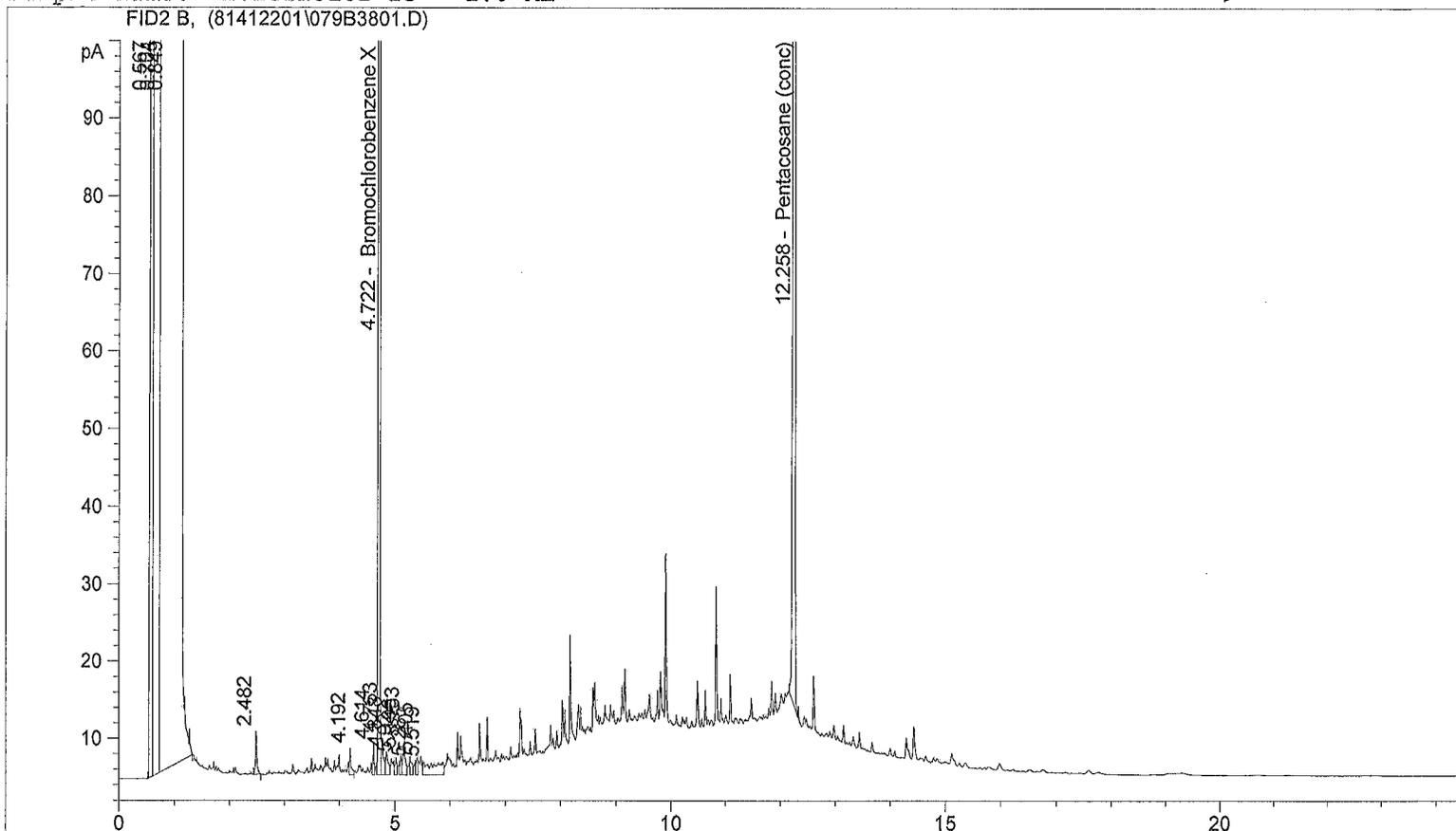
G < 130 ug/L
 D < 310 ug/L

RE	BY
	MS 1/9/15

12-22-14 EBS

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\079B3801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/21/2014 5:52:54 AM 12/21/2014 5:52:54 AM
 Report Creation: 12/21/2014 10:07:01 AM

Sample Name: EV14120162-25 1.0 ML ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.722	FID2 B,	Bromochlorobenzene X	2959.411	230.420
12.258		Pentacosane (conc)	2951.273	76.599

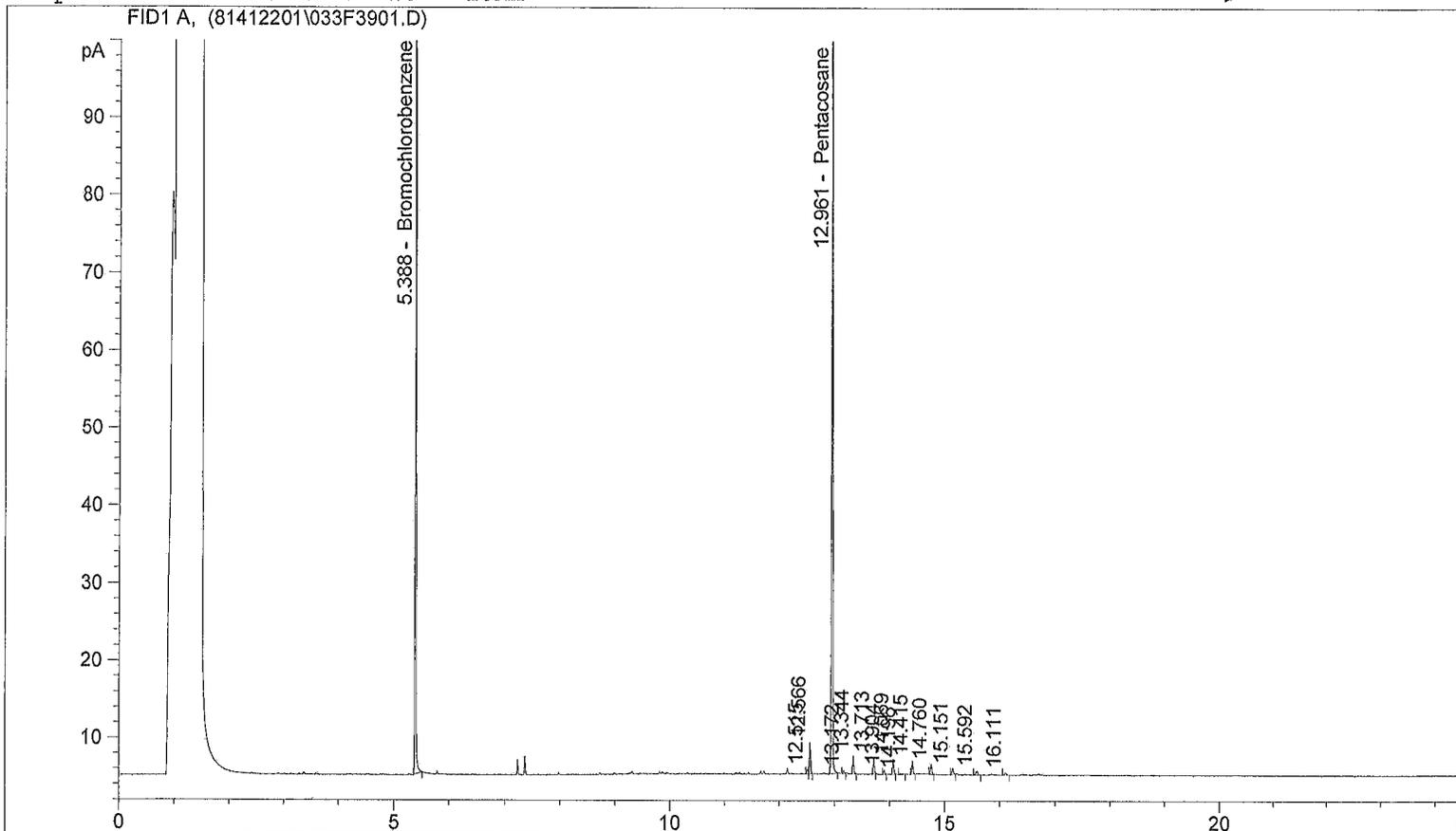
77%

0 < 310 ug/L

RE	BY	MS
		1/9/15

12.22.14 ES

Sample Name: EV14120162-26 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.388	FID1 A,	Bromochlorobenzene	149.092	25.794
12.961		Pentacosane	159.216	8.083

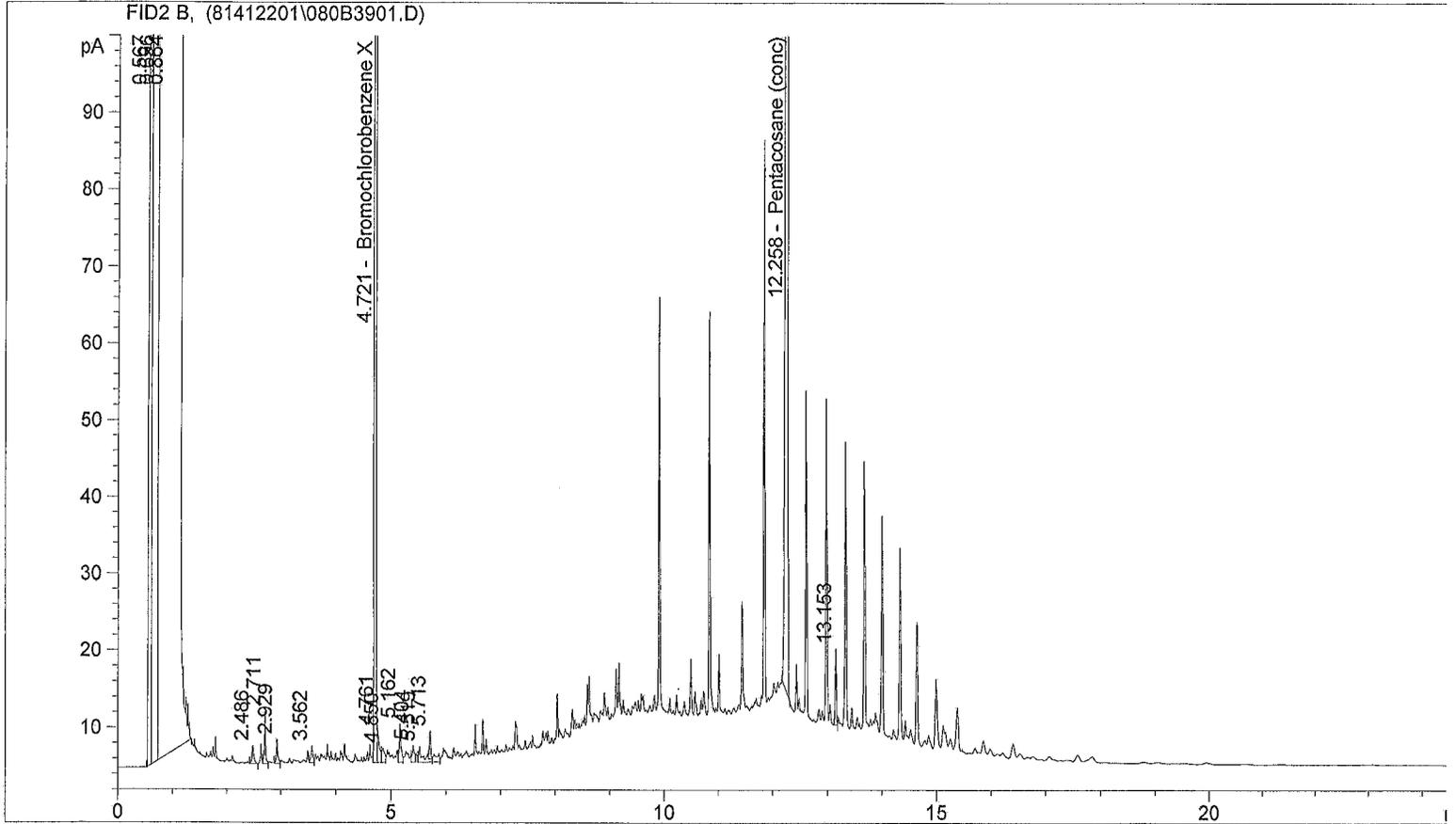
103%
81%

G < 130 µg/L
 D < 310 µg/L

RC BY *12*
 1/9/15

12.22.14EJ

Sample Name: EV14120162-26 1.0 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.721	FID2 B,	Bromochlorobenzene X	2955.327	230.102
12.258		Pentacosane (conc)	3003.532	77.955

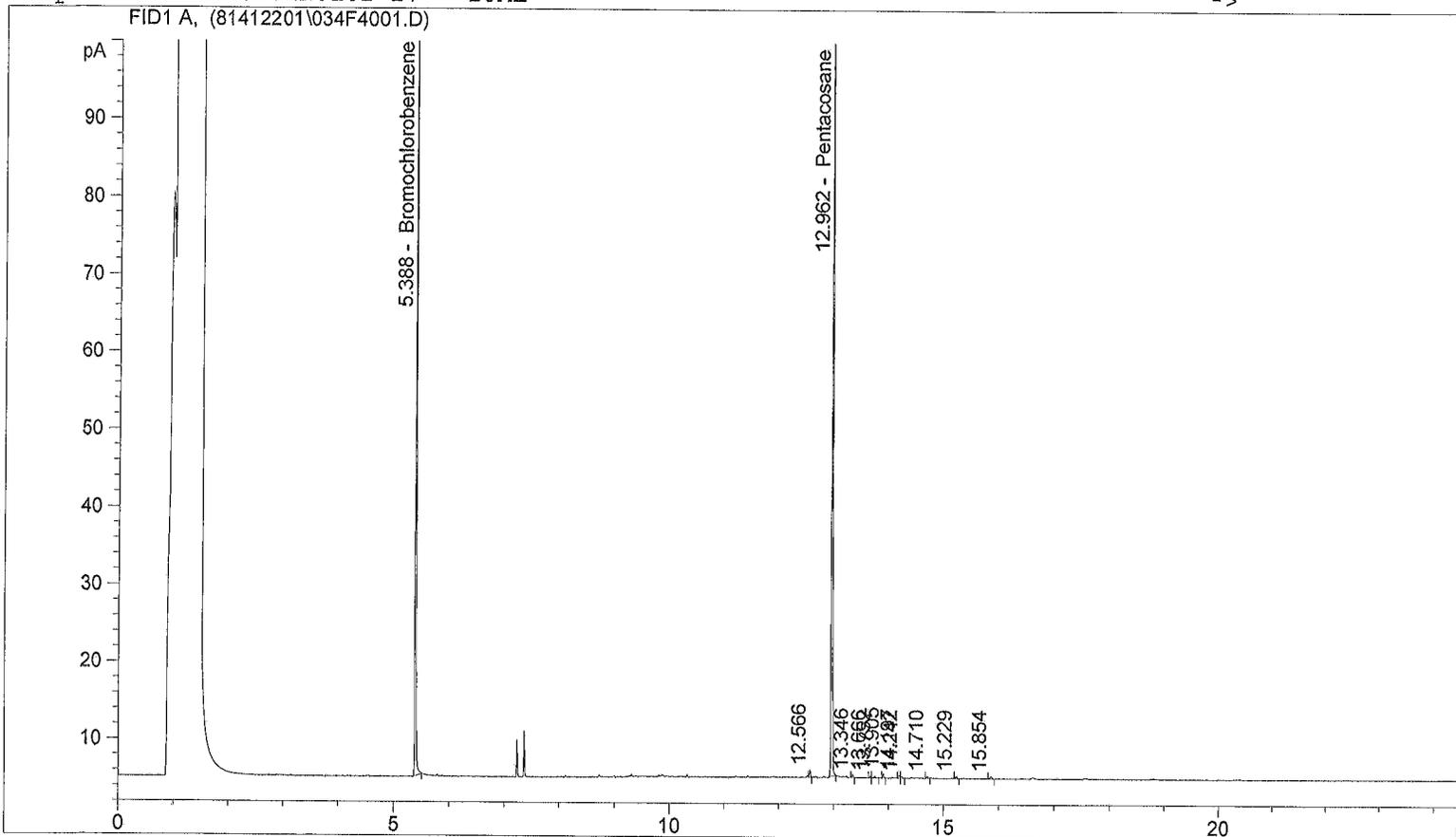
781.

O < 310 ug/L

REL BY *AS*
 1/9/15

12.22.14ES

Sample Name: EV14120162-27 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.388	FID1 A,	Bromochlorobenzene	145.952	25.250
12.962		Pentacosane	151.037	7.668

101%
77%

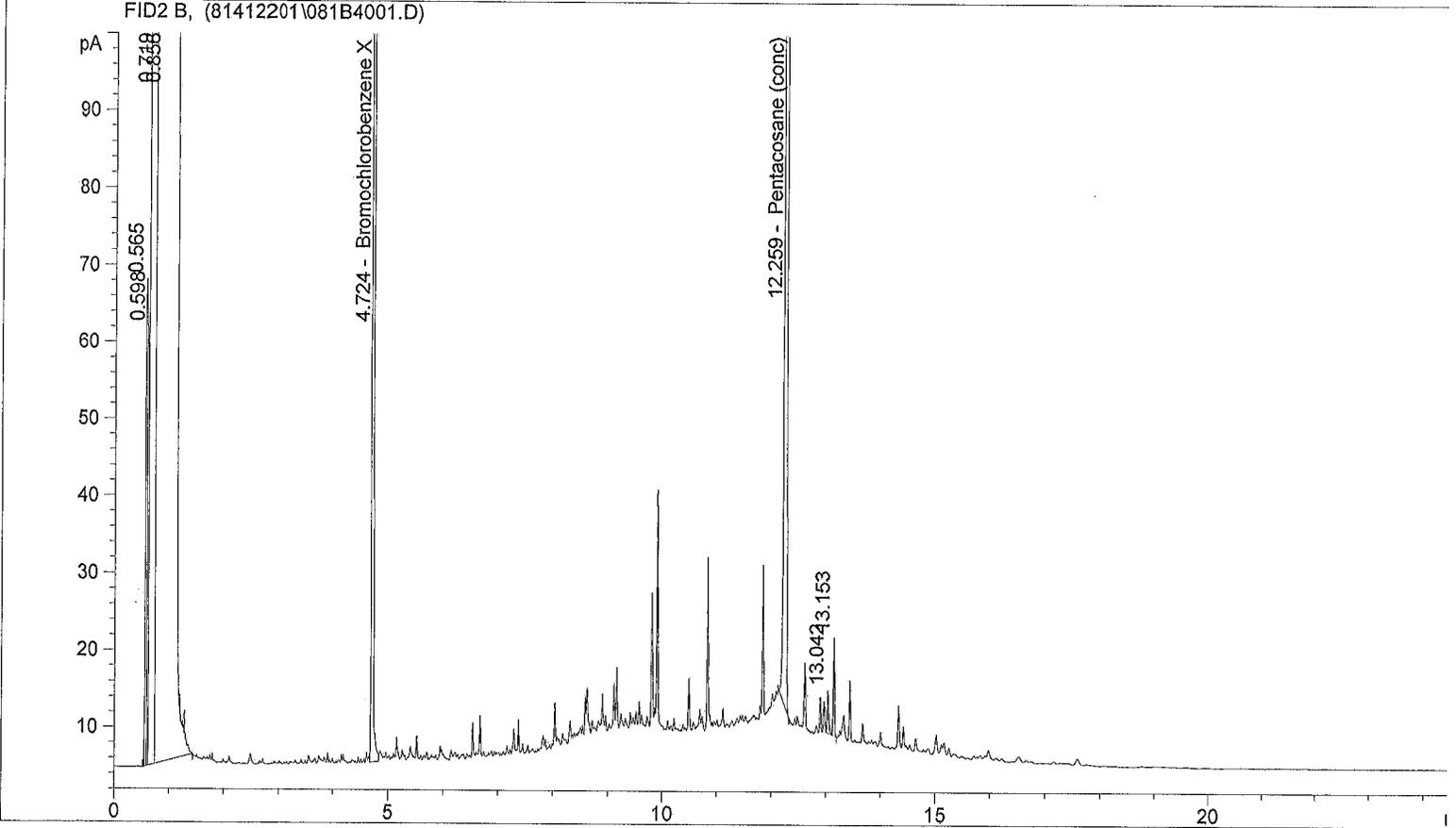
G < 130 ug/L
 D < 310 ug/L

RE	BY	15
		1/1/5

12.22.14ES

Sample Name: EV14120162-27 1.0 ML

FID2 B, (81412201\081B4001.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.724	FID2 B,	Bromochlorobenzene X	3239.768	252.248
12.259		Pentacosane (conc)	3207.015	83.237

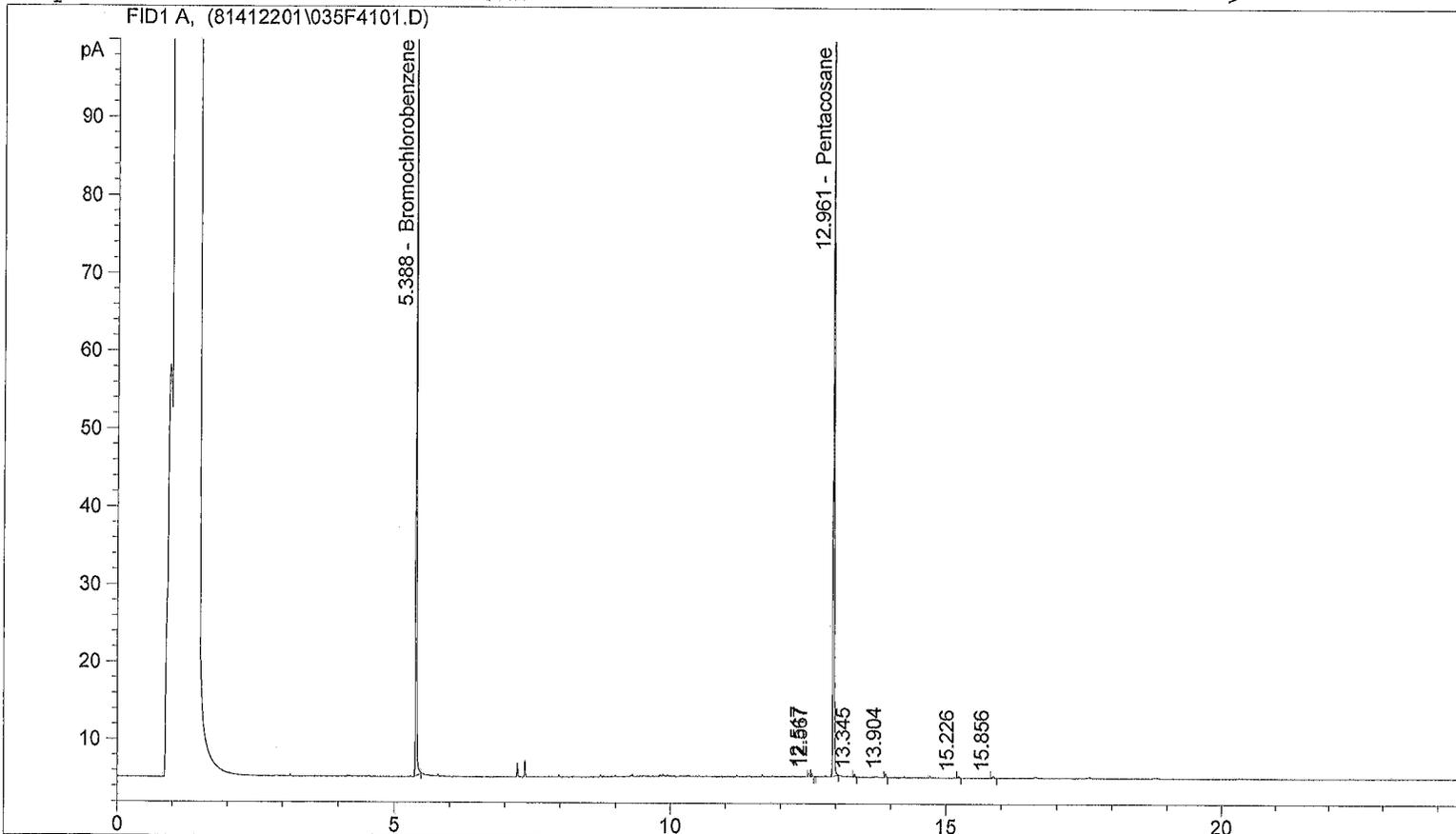
O < 310 ng/L

RE BY *RB*
 : : *12/15*

12.22.14 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\035F4101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 12/21/2014 7:36:05 AM 12/21/2014 7:36:05 AM
 Report Creation: 12/21/2014 10:16:58 AM

Sample Name: EV14120162-28 10ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
5.388	FID1 A,	Bromochlorobenzene	138.358	23.937	96%
12.961		Pentacosane	143.573	7.289	73%

G < 130 ug/L
 D < 310 ug/L

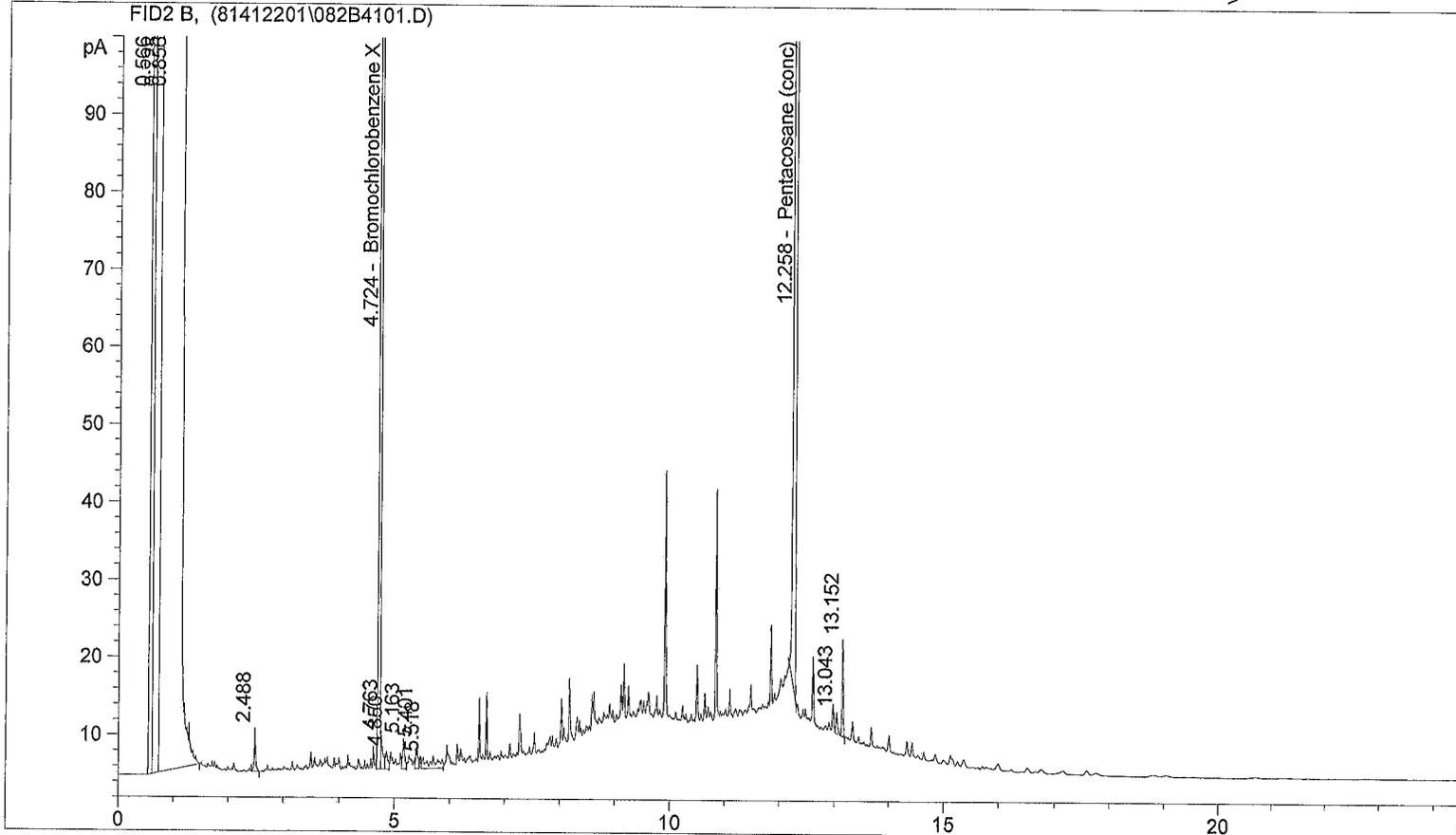
RE BY RS
 1/9/15

12.22.14E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81412201\082B4101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 12/21/2014 7:36:05 AM 12/21/2014 7:36:05 AM
 Report Creation: 12/21/2014 10:07:51 AM

Sample Name: EV14120162-28 1.0 ML

FID2 B, (81412201\082B4101.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.724	FID2 B,	Bromochlorobenzene X	3181.302	247.696
12.258		Pentacosane (conc)	3139.276	81.479

81%

O < 310 ug/L

RE BY RB
 1/1/15

12.22.14



May 21, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On March 25th, 12 samples were received by our laboratory and assigned our laboratory project number EV15030127. The project was identified as your Closed City of Yakima Landfill / #1148008.030.032. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report is being re-issued to include:
Batch R252413 Blank Spike Chloride results.
Batch R253751 Blank Spike PCB-1260 result qualifier.
Corrected COC and sample receipt checklist.

No other abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
 130 - 2nd Ave. S.
 Edmonds, WA 98020

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

CLIENT SAMPLE ID MW-14-032315

DATE: 5/21/2015
 ALS JOB#: EV15030127
 ALS SAMPLE#: EV15030127-01
 DATE RECEIVED: 03/25/2015
 COLLECTION DATE: 3/23/2015 1:05:00 PM

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/25/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
Total Dissolved Solids	SM2540C	66	5.0	1	MG/L	03/27/2015	DNT
Chloride	EPA-300.0	4.8	0.092	1	MG/L	03/25/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/25/2015	DNT
Nitrate as N	EPA-300.0	0.49	0.034	1	MG/L	03/25/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/25/2015	DNT
Sulfate	EPA-300.0	4.5	0.26	1	MG/L	03/25/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	03/27/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	03/25/2015	RAL
Arsenic	EPA-200.8	U	0.45	1	ug/L	03/27/2015	RAL
Barium	EPA-200.8	4.3	1.0	1	ug/L	03/27/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium	EPA-200.8	11000	100	1	ug/L	03/27/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron	EPA-200.8	70	50	1	ug/L	03/27/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium	EPA-200.8	3900	50	1	ug/L	03/27/2015	RAL
Manganese	EPA-200.8	3.7	2.0	1	ug/L	03/27/2015	RAL
Potassium	EPA-200.8	1300	50	1	ug/L	03/27/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium	EPA-200.8	6300	50	1	ug/L	03/27/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	03/27/2015	RAL
Barium (Dissolved)	EPA-200.8	3.4	1.0	1	ug/L	03/27/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium (Dissolved)	EPA-200.8	11000	100	1	ug/L	03/27/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	03/27/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-01
		DATE RECEIVED:	03/25/2015
CLIENT SAMPLE ID	MW-14-032315	COLLECTION DATE:	3/23/2015 1:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium (Dissolved)	EPA-200.8	3900	50	1	ug/L	03/27/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Potassium (Dissolved)	EPA-200.8	1300	50	1	ug/L	03/27/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium (Dissolved)	EPA-200.8	6200	50	1	ug/L	03/27/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	47	0.0	1	MG/L	03/31/2015	CAS
Bicarbonate as CaCO3	SM2320B	47	0.0	1	MG/L	03/31/2015	CAS
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	0.77	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	91.9	03/25/2015	EBS
C25	NWTPH-HCID	80.2	03/25/2015	EBS
C25 (conc)	NWTPH-HCID	76.4	03/25/2015	EBS
DCB	EPA-8082	73.0	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-02
CLIENT SAMPLE ID	MW-15-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/25/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	03/25/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	03/25/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	03/25/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	03/25/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	03/25/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	03/25/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	03/25/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	03/25/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	03/25/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	03/25/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	03/25/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-02
CLIENT SAMPLE ID	MW-15-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	03/25/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	03/25/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	03/25/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	03/25/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	03/25/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	03/25/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Naphthalene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	ug/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-02
CLIENT SAMPLE ID	MW-15-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-02
CLIENT SAMPLE ID	MW-15-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-02
		DATE RECEIVED:	03/25/2015
CLIENT SAMPLE ID	MW-15-032315	COLLECTION DATE:	3/23/2015 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endosulfan II	EPA-8081	0.017	0.010	1	ug/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	130	5.0	1	MG/L	03/27/2015	DNT
Chloride	EPA-300.0	10	0.092	1	MG/L	03/25/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/25/2015	DNT
Nitrate as N	EPA-300.0	0.063	0.034	1	MG/L	03/25/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/25/2015	DNT
Sulfate	EPA-300.0	1.9	0.26	1	MG/L	03/25/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	03/27/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	03/25/2015	RAL
Arsenic	EPA-200.8	0.85	0.45	1	ug/L	03/27/2015	RAL
Barium	EPA-200.8	21	1.0	1	ug/L	03/27/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium	EPA-200.8	20000	100	1	ug/L	03/27/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron	EPA-200.8	3600	50	1	ug/L	03/27/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium	EPA-200.8	7900	50	1	ug/L	03/27/2015	RAL
Manganese	EPA-200.8	590	2.0	1	ug/L	03/27/2015	RAL
Potassium	EPA-200.8	3100	50	1	ug/L	03/27/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium	EPA-200.8	9100	50	1	ug/L	03/27/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	03/27/2015	RAL
Barium (Dissolved)	EPA-200.8	21	1.0	1	ug/L	03/27/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-02
CLIENT SAMPLE ID	MW-15-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium (Dissolved)	EPA-200.8	20000	100	1	ug/L	03/27/2015	RAL
Chromium (Dissolved)	EPA-200.8	2.1	2.0	1	ug/L	03/27/2015	RAL
Iron (Dissolved)	EPA-200.8	2700	50	1	ug/L	03/27/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium (Dissolved)	EPA-200.8	7800	50	1	ug/L	03/27/2015	RAL
Manganese (Dissolved)	EPA-200.8	560	2.0	1	ug/L	03/27/2015	RAL
Potassium (Dissolved)	EPA-200.8	3000	50	1	ug/L	03/27/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium (Dissolved)	EPA-200.8	8900	50	1	ug/L	03/27/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	90	0.0	1	MG/L	03/31/2015	CAS
Bicarbonate as CaCO3	SM2320B	90	0.0	1	MG/L	03/31/2015	CAS
Ammonia as N	EPA-350.1	0.093	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.6	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	54.2	03/25/2015	EBS
C25	NWTPH-HCID	50.8	03/25/2015	EBS
C25 (conc)	NWTPH-HCID	79.8	03/25/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	101	03/25/2015	DLC
Toluene-d8	EPA-8260	96.9	03/25/2015	DLC
4-Bromofluorobenzene	EPA-8260	98.9	03/25/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	70.5	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	100	03/31/2015	GAP
2-Fluorophenol	EPA-8270	46.5	03/30/2015	GAP
Phenol-d5	EPA-8270	27.7	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	86.0	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	70.1	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	105	03/30/2015	GAP
Terphenyl-d14	EPA-8270	101	03/30/2015	GAP
DCB	EPA-8082	76.0	04/06/2015	CAS
TCMX	EPA-8081	72.0	04/03/2015	CAS
DCB	EPA-8081	90.0	04/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-03
		DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 3:30:00 PM
CLIENT SAMPLE ID	MW-16-032315	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/25/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.0065	1	ug/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
Total Dissolved Solids	SM2540C	580	5.0	1	MG/L	03/27/2015	DNT
Chloride	EPA-300.0	20	0.092	1	MG/L	03/25/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/25/2015	DNT
Nitrate as N	EPA-300.0	2.7	0.034	1	MG/L	03/25/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/25/2015	DNT
Sulfate	EPA-300.0	6.2	0.26	1	MG/L	03/25/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	03/27/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	03/25/2015	RAL
Arsenic	EPA-200.8	U	0.45	1	ug/L	03/27/2015	RAL
Barium	EPA-200.8	22	1.0	1	ug/L	03/27/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium	EPA-200.8	50000	100	1	ug/L	03/27/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron	EPA-200.8	170	50	1	ug/L	03/27/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium	EPA-200.8	16000	50	1	ug/L	03/27/2015	RAL
Manganese	EPA-200.8	630	2.0	1	ug/L	03/27/2015	RAL
Potassium	EPA-200.8	10000	50	1	ug/L	03/27/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium	EPA-200.8	20000	50	1	ug/L	03/27/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	03/27/2015	RAL
Barium (Dissolved)	EPA-200.8	22	1.0	1	ug/L	03/27/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium (Dissolved)	EPA-200.8	50000	100	1	ug/L	03/27/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	03/27/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-03
CLIENT SAMPLE ID	MW-16-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 3:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium (Dissolved)	EPA-200.8	15000	50	1	ug/L	03/27/2015	RAL
Manganese (Dissolved)	EPA-200.8	630	2.0	1	ug/L	03/27/2015	RAL
Potassium (Dissolved)	EPA-200.8	10000	50	1	ug/L	03/27/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium (Dissolved)	EPA-200.8	20000	50	1	ug/L	03/27/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	210	0.0	1	MG/L	03/31/2015	CAS
Bicarbonate as CaCO3	SM2320B	210	0.0	1	MG/L	03/31/2015	CAS
Ammonia as N	EPA-350.1	0.20	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	2.4	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	63.0	03/25/2015	EBS
C25	NWTPH-HCID	54.6	03/25/2015	EBS
C25 (conc)	NWTPH-HCID	82.9	03/25/2015	EBS
DCB	EPA-8082	82.0	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-04
CLIENT SAMPLE ID	MW-17-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 3:01:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/25/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	03/25/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	03/25/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	03/25/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	03/25/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	03/25/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	03/25/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	03/25/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	03/25/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	03/25/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	03/25/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	03/25/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-04
		DATE RECEIVED:	03/25/2015
CLIENT SAMPLE ID	MW-17-032315	COLLECTION DATE:	3/23/2015 3:01:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	03/25/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	03/25/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	03/25/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	03/25/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	03/25/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	03/25/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	0.014	0.0090	1	ug/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-04
CLIENT SAMPLE ID	MW-17-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 3:01:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-04
CLIENT SAMPLE ID	MW-17-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 3:01:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/27/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1242	EPA-8082	0.012	0.0050	1	ug/L	04/27/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
A-BHC	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Aldrin	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-04
CLIENT SAMPLE ID	MW-17-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 3:01:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Endosulfan II	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	280	5.0	1	MG/L	03/27/2015	DNT
Chloride	EPA-300.0	18	0.46	5	MG/L	03/31/2015	DNT
Fluoride	EPA-300.0	0.17	0.16	1	MG/L	03/25/2015	DNT
Nitrate as N	EPA-300.0	0.23	0.034	1	MG/L	03/25/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/25/2015	DNT
Sulfate	EPA-300.0	0.35	0.26	1	MG/L	03/25/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	03/27/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	03/25/2015	RAL
Arsenic	EPA-200.8	2.6	0.45	1	ug/L	03/27/2015	RAL
Barium	EPA-200.8	69	1.0	1	ug/L	03/27/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium	EPA-200.8	47000	100	1	ug/L	03/27/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron	EPA-200.8	21000	50	1	ug/L	03/27/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium	EPA-200.8	17000	50	1	ug/L	03/27/2015	RAL
Manganese	EPA-200.8	2200	2.0	1	ug/L	03/27/2015	RAL
Potassium	EPA-200.8	9800	50	1	ug/L	03/27/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium	EPA-200.8	26000	50	1	ug/L	03/27/2015	RAL
Arsenic (Dissolved)	EPA-200.8	1.6	0.45	1	ug/L	03/27/2015	RAL
Barium (Dissolved)	EPA-200.8	68	1.0	1	ug/L	03/27/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-04
CLIENT SAMPLE ID	MW-17-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 3:01:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium (Dissolved)	EPA-200.8	45000	100	1	ug/L	03/27/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron (Dissolved)	EPA-200.8	20000	50	1	ug/L	03/27/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium (Dissolved)	EPA-200.8	16000	50	1	ug/L	03/27/2015	RAL
Manganese (Dissolved)	EPA-200.8	2200	2.0	1	ug/L	03/27/2015	RAL
Potassium (Dissolved)	EPA-200.8	9500	50	1	ug/L	03/27/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium (Dissolved)	EPA-200.8	25000	50	1	ug/L	03/27/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	240	0.0	1	MG/L	03/31/2015	CAS
Bicarbonate as CaCO3	SM2320B	240	0.0	1	MG/L	03/31/2015	CAS
Ammonia as N	EPA-350.1	2.6	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.0	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	58.9	03/25/2015	EBS
C25	NWTPH-HCID	51.1	03/25/2015	EBS
C25 (conc)	NWTPH-HCID	78.7	03/25/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	100	03/25/2015	DLC
Toluene-d8	EPA-8260	97.0	03/25/2015	DLC
4-Bromofluorobenzene	EPA-8260	97.2	03/25/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	76.0	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	103	03/31/2015	GAP
2-Fluorophenol	EPA-8270	51.0	03/30/2015	GAP
Phenol-d5	EPA-8270	30.8	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	89.5	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	77.9	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	117	03/30/2015	GAP
Terphenyl-d14	EPA-8270	101	03/30/2015	GAP
DCB	EPA-8082	89.0	04/27/2015	CAS
TCMX	EPA-8081	70.0	04/03/2015	CAS
DCB	EPA-8081	89.0	04/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-05
CLIENT SAMPLE ID	MW-100-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 5:51:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/25/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	03/25/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Chloroform	EPA-8260 SIM	1.1	0.14	1	ug/L	03/25/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	03/25/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	03/25/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	03/25/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	03/25/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	03/25/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	03/25/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	03/25/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	03/25/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	03/25/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-05
		DATE RECEIVED:	03/25/2015
CLIENT SAMPLE ID	MW-100-032315	COLLECTION DATE:	3/23/2015 5:51:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	03/25/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	03/25/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	03/25/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	03/25/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	03/25/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	03/25/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Naphthalene	EPA-8270 SIM	0.020	0.013	1	ug/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-05
CLIENT SAMPLE ID	MW-100-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 5:51:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-05
CLIENT SAMPLE ID	MW-100-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 5:51:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0051	1	ug/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.0051	1	ug/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	04/06/2015	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-05
CLIENT SAMPLE ID	MW-100-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 5:51:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
Endosulfan II	EPA-8081	0.017	0.011	1	ug/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	ug/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.51	1	ug/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	180	5.0	1	MG/L	03/27/2015	DNT
Chloride	EPA-300.0	11	0.092	1	MG/L	03/25/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/25/2015	DNT
Nitrate as N	EPA-300.0	1.2	0.034	1	MG/L	03/25/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/25/2015	DNT
Sulfate	EPA-300.0	10	0.26	1	MG/L	03/25/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	03/27/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	03/25/2015	RAL
Arsenic	EPA-200.8	0.86	0.45	1	ug/L	03/27/2015	RAL
Barium	EPA-200.8	6.8	1.0	1	ug/L	03/27/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium	EPA-200.8	33000	100	1	ug/L	03/27/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron	EPA-200.8	110	50	1	ug/L	03/27/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium	EPA-200.8	9900	50	1	ug/L	03/27/2015	RAL
Manganese	EPA-200.8	110	2.0	1	ug/L	03/27/2015	RAL
Potassium	EPA-200.8	3900	50	1	ug/L	03/27/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium	EPA-200.8	12000	50	1	ug/L	03/27/2015	RAL
Arsenic (Dissolved)	EPA-200.8	0.61	0.45	1	ug/L	03/27/2015	RAL
Barium (Dissolved)	EPA-200.8	6.5	1.0	1	ug/L	03/27/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-05
CLIENT SAMPLE ID	MW-100-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 5:51:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium (Dissolved)	EPA-200.8	32000	100	1	ug/L	03/27/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	03/27/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium (Dissolved)	EPA-200.8	9700	50	1	ug/L	03/27/2015	RAL
Manganese (Dissolved)	EPA-200.8	110	2.0	1	ug/L	03/27/2015	RAL
Potassium (Dissolved)	EPA-200.8	3800	50	1	ug/L	03/27/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium (Dissolved)	EPA-200.8	12000	50	1	ug/L	03/27/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	120	0.0	1	MG/L	03/31/2015	CAS
Bicarbonate as CaCO3	SM2320B	120	0.0	1	MG/L	03/31/2015	CAS
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	0.88	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	61.1	03/25/2015	EBS
C25	NWTPH-HCID	51.2	03/25/2015	EBS
C25 (conc)	NWTPH-HCID	85.5	03/25/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	101	03/25/2015	DLC
Toluene-d8	EPA-8260	95.9	03/25/2015	DLC
4-Bromofluorobenzene	EPA-8260	98.9	03/25/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	74.5	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	109	03/31/2015	GAP
2-Fluorophenol	EPA-8270	50.1	03/30/2015	GAP
Phenol-d5	EPA-8270	30.0	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	90.2	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	80.7	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	111	03/30/2015	GAP
Terphenyl-d14	EPA-8270	103	03/30/2015	GAP
DCB	EPA-8082	75.0	04/06/2015	CAS
TCMX	EPA-8081	68.0	04/03/2015	CAS
DCB	EPA-8081	81.0	04/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-06
CLIENT SAMPLE ID	MW-109-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 5:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/25/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	03/25/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	03/25/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	03/25/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	03/25/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	03/25/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	03/25/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	03/25/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	03/25/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	03/25/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	03/25/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	03/25/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-06
CLIENT SAMPLE ID	MW-109-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 5:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	03/25/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	03/25/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	03/25/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	03/25/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	03/25/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	03/25/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Naphthalene	EPA-8270 SIM	0.030	0.014	1	ug/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	ug/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-06
CLIENT SAMPLE ID	MW-109-032315	DATE RECEIVED:	03/25/2015
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		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-06
CLIENT SAMPLE ID	MW-109-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 5:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
A-BHC	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Aldrin	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-06
CLIENT SAMPLE ID	MW-109-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 5:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Endosulfan II	EPA-8081	0.029	0.0099	1	ug/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.0099	1	ug/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	170	5.0	1	MG/L	03/27/2015	DNT
Chloride	EPA-300.0	11	0.092	1	MG/L	03/25/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/25/2015	DNT
Nitrate as N	EPA-300.0	0.50	0.034	1	MG/L	03/25/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/25/2015	DNT
Sulfate	EPA-300.0	7.6	0.26	1	MG/L	03/25/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	03/27/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	03/25/2015	RAL
Arsenic	EPA-200.8	0.51	0.45	1	ug/L	03/27/2015	RAL
Barium	EPA-200.8	12	1.0	1	ug/L	03/27/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium	EPA-200.8	32000	100	1	ug/L	03/27/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron	EPA-200.8	150	50	1	ug/L	03/27/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium	EPA-200.8	11000	50	1	ug/L	03/27/2015	RAL
Manganese	EPA-200.8	400	2.0	1	ug/L	03/27/2015	RAL
Potassium	EPA-200.8	4800	50	1	ug/L	03/27/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium	EPA-200.8	14000	50	1	ug/L	03/27/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	03/27/2015	RAL
Barium (Dissolved)	EPA-200.8	11	1.0	1	ug/L	03/27/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-06
CLIENT SAMPLE ID	MW-109-032315	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015 5:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium (Dissolved)	EPA-200.8	31000	100	1	ug/L	03/27/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron (Dissolved)	EPA-200.8	92	50	1	ug/L	03/27/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium (Dissolved)	EPA-200.8	11000	50	1	ug/L	03/27/2015	RAL
Manganese (Dissolved)	EPA-200.8	390	2.0	1	ug/L	03/27/2015	RAL
Potassium (Dissolved)	EPA-200.8	4800	50	1	ug/L	03/27/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium (Dissolved)	EPA-200.8	14000	50	1	ug/L	03/27/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	140	0.0	1	MG/L	03/31/2015	CAS
Bicarbonate as CaCO3	SM2320B	140	0.0	1	MG/L	03/31/2015	CAS
Ammonia as N	EPA-350.1	0.29	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.4	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	94.2	03/25/2015	EBS
C25	NWTPH-HCID	75.7	03/25/2015	EBS
C25 (conc)	NWTPH-HCID	80.8	03/25/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	99.5	03/25/2015	DLC
Toluene-d8	EPA-8260	95.5	03/25/2015	DLC
4-Bromofluorobenzene	EPA-8260	98.5	03/25/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	75.1	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	108	03/31/2015	GAP
2-Fluorophenol	EPA-8270	54.7	03/30/2015	GAP
Phenol-d5	EPA-8270	32.2	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	97.9	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	88.1	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	119	03/30/2015	GAP
Terphenyl-d14	EPA-8270	111	03/30/2015	GAP
DCB	EPA-8082	77.0	04/06/2015	CAS
TCMX	EPA-8081	72.0	04/03/2015	CAS
DCB	EPA-8081	86.0	04/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-07
CLIENT SAMPLE ID	Trip Blanks	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	03/25/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	03/25/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	03/25/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	03/25/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	03/25/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	03/25/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	03/25/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	03/25/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	03/25/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	03/25/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	03/25/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-07
CLIENT SAMPLE ID	Trip Blanks	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/23/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	03/25/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	03/25/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	03/25/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	03/25/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	03/25/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	03/25/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	100	03/25/2015	DLC
Toluene-d8	EPA-8260	95.9	03/25/2015	DLC
4-Bromofluorobenzene	EPA-8260	98.8	03/25/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-08
CLIENT SAMPLE ID	MW-6-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 10:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/25/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
Total Dissolved Solids	SM2540C	180	5.0	1	MG/L	03/27/2015	DNT
Chloride	EPA-300.0	18	0.46	5	MG/L	03/31/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/25/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/25/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/25/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/25/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	03/27/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	03/25/2015	RAL
Arsenic	EPA-200.8	1.1	0.45	1	ug/L	03/27/2015	RAL
Barium	EPA-200.8	50	1.0	1	ug/L	03/27/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium	EPA-200.8	32000	100	1	ug/L	03/27/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron	EPA-200.8	23000	50	1	ug/L	03/27/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium	EPA-200.8	11000	50	1	ug/L	03/27/2015	RAL
Manganese	EPA-200.8	2200	2.0	1	ug/L	03/27/2015	RAL
Potassium	EPA-200.8	9300	50	1	ug/L	03/27/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium	EPA-200.8	14000	50	1	ug/L	03/27/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.2	0.45	1	ug/L	03/27/2015	RAL
Barium (Dissolved)	EPA-200.8	47	1.0	1	ug/L	03/27/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium (Dissolved)	EPA-200.8	32000	100	1	ug/L	03/27/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron (Dissolved)	EPA-200.8	23000	50	1	ug/L	03/27/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium (Dissolved)	EPA-200.8	11000	50	1	ug/L	03/27/2015	RAL
Manganese (Dissolved)	EPA-200.8	2200	2.0	1	ug/L	03/27/2015	RAL
Potassium (Dissolved)	EPA-200.8	9200	50	1	ug/L	03/27/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium (Dissolved)	EPA-200.8	13000	50	1	ug/L	03/27/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-08
CLIENT SAMPLE ID	MW-6-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 10:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total	SM2320B	150	0.0	1	MG/L	03/31/2015	CAS
Bicarbonate as CaCO3	SM2320B	150	0.0	1	MG/L	03/31/2015	CAS
Ammonia as N	EPA-350.1	0.64	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	3.8	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	94.7	03/25/2015	EBS
C25	NWTPH-HCID	75.9	03/25/2015	EBS
C25 (conc)	NWTPH-HCID	80.5	03/25/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-09
CLIENT SAMPLE ID	MW-106-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	130	1	ug/L	03/25/2015	EBS
TPH-Diesel Range	NWTPH-DX	180	130	1	ug/L	03/25/2015	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	250	1	ug/L	03/25/2015	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	ug/L	03/25/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	03/25/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	03/25/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	03/25/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	03/25/2015	DLC
1,1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	03/25/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	03/25/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	03/25/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	03/25/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	03/25/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	03/25/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	03/25/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-09
CLIENT SAMPLE ID	MW-106-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	03/25/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	03/25/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	03/25/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	03/25/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	03/25/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	03/25/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	03/25/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	03/25/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/25/2015	DLC
Naphthalene	EPA-8270 SIM	0.080	0.013	1	ug/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	0.066	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	0.13	0.014	1	ug/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

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CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-09
CLIENT SAMPLE ID	MW-106-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	03/31/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	0.023	0.013	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	0.015	0.01	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-09
CLIENT SAMPLE ID	MW-106-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	03/30/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.013	1	ug/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.036	1	ug/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.022	1	ug/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.015	1	ug/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
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CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-09
CLIENT SAMPLE ID	MW-106-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Aldrin	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	290	5.0	1	MG/L	03/27/2015	DNT
Chloride	EPA-300.0	18	0.092	1	MG/L	03/25/2015	DNT
Fluoride	EPA-300.0	0.17	0.16	1	MG/L	03/25/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/25/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/25/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/25/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	03/27/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	03/25/2015	RAL
Arsenic	EPA-200.8	7.2	0.45	1	ug/L	03/27/2015	RAL
Barium	EPA-200.8	98	1.0	1	ug/L	03/27/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium	EPA-200.8	47000	100	1	ug/L	03/27/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron	EPA-200.8	41000	50	1	ug/L	03/27/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium	EPA-200.8	14000	50	1	ug/L	03/27/2015	RAL
Manganese	EPA-200.8	2800	2.0	1	ug/L	03/27/2015	RAL
Potassium	EPA-200.8	13000	50	1	ug/L	03/27/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium	EPA-200.8	23000	50	1	ug/L	03/27/2015	RAL
Arsenic (Dissolved)	EPA-200.8	8.7	0.45	1	ug/L	03/27/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
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		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Barium (Dissolved)	EPA-200.8	97	1.0	1	ug/L	03/27/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium (Dissolved)	EPA-200.8	46000	100	1	ug/L	03/27/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron (Dissolved)	EPA-200.8	40000	50	1	ug/L	03/27/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium (Dissolved)	EPA-200.8	14000	50	1	ug/L	03/27/2015	RAL
Manganese (Dissolved)	EPA-200.8	2900	2.0	1	ug/L	03/27/2015	RAL
Potassium (Dissolved)	EPA-200.8	12000	50	1	ug/L	03/27/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium (Dissolved)	EPA-200.8	22000	50	1	ug/L	03/27/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	250	0.0	1	MG/L	03/31/2015	CAS
Bicarbonate as CaCO3	SM2320B	250	0.0	1	MG/L	03/31/2015	CAS
Ammonia as N	EPA-350.1	10	0.25	5	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	6.8	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	113	03/25/2015	EBS
C25	NWTPH-DX	99.4	03/25/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	100	03/25/2015	DLC
Toluene-d8	EPA-8260	94.5	03/25/2015	DLC
4-Bromofluorobenzene	EPA-8260	98.4	03/25/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	73.4	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	93.6	03/31/2015	GAP
2-Fluorophenol	EPA-8270	51.2	03/30/2015	GAP
Phenol-d5	EPA-8270	31.3	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	92.5	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	83.1	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	120	03/30/2015	GAP
Terphenyl-d14	EPA-8270	99.1	03/30/2015	GAP
DCB	EPA-8082	80.0	04/06/2015	CAS
TCMX	EPA-8081	64.0	04/03/2015	CAS
DCB	EPA-8081	82.0	04/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-10
CLIENT SAMPLE ID	DUP-1-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	130	1	ug/L	03/25/2015	EBS
TPH-Diesel Range	NWTPH-DX	200	130	1	ug/L	03/25/2015	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	250	1	ug/L	03/25/2015	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	ug/L	03/25/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	03/26/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	03/26/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	03/26/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	03/26/2015	DLC
1,1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	03/26/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	03/26/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	03/26/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	03/26/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	03/26/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	03/26/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	03/26/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
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CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-10
CLIENT SAMPLE ID	DUP-1-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	03/26/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	03/26/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	03/26/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	03/26/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	03/26/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	03/26/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	03/26/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	03/26/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	03/26/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Naphthalene	EPA-8270 SIM	0.039	0.013	1	ug/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	0.063	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	0.10	0.014	1	ug/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

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CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-10
CLIENT SAMPLE ID	DUP-1-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	03/31/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	0.020	0.013	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-10
CLIENT SAMPLE ID	DUP-1-032415	DATE RECEIVED:	03/25/2015
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	03/30/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.015	1	ug/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.068	1	ug/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.072	1	ug/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.023	1	ug/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.019	1	ug/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
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CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-10
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Aldrin	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	270	5.0	1	MG/L	03/31/2015	DLC
Chloride	EPA-300.0	18	0.092	1	MG/L	03/25/2015	DNT
Fluoride	EPA-300.0	0.25	0.16	1	MG/L	03/25/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/25/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/25/2015	DNT
Sulfate	EPA-300.0	0.33	0.26	1	MG/L	03/25/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	03/27/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	03/25/2015	RAL
Arsenic	EPA-200.8	8.8	0.45	1	ug/L	03/27/2015	RAL
Barium	EPA-200.8	100	1.0	1	ug/L	03/27/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium	EPA-200.8	47000	100	1	ug/L	03/27/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron	EPA-200.8	41000	50	1	ug/L	03/27/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium	EPA-200.8	14000	50	1	ug/L	03/27/2015	RAL
Manganese	EPA-200.8	2900	2.0	1	ug/L	03/27/2015	RAL
Potassium	EPA-200.8	13000	50	1	ug/L	03/27/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium	EPA-200.8	23000	50	1	ug/L	03/27/2015	RAL
Arsenic (Dissolved)	EPA-200.8	8.5	0.45	1	ug/L	03/27/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-10
CLIENT SAMPLE ID	DUP-1-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Barium (Dissolved)	EPA-200.8	97	1.0	1	ug/L	03/27/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium (Dissolved)	EPA-200.8	46000	100	1	ug/L	03/27/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron (Dissolved)	EPA-200.8	40000	50	1	ug/L	03/27/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium (Dissolved)	EPA-200.8	14000	50	1	ug/L	03/27/2015	RAL
Manganese (Dissolved)	EPA-200.8	2900	2.0	1	ug/L	03/27/2015	RAL
Potassium (Dissolved)	EPA-200.8	12000	50	1	ug/L	03/27/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium (Dissolved)	EPA-200.8	22000	50	1	ug/L	03/27/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	260	0.0	1	MG/L	03/31/2015	CAS
Bicarbonate as CaCO3	SM2320B	260	0.0	1	MG/L	03/31/2015	CAS
Ammonia as N	EPA-350.1	10	0.25	5	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	6.7	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	114	03/25/2015	EBS
C25	NWTPH-DX	101	03/25/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	101	03/26/2015	DLC
Toluene-d8	EPA-8260	95.9	03/26/2015	DLC
4-Bromofluorobenzene	EPA-8260	98.1	03/26/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	71.4	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	90.8	03/31/2015	GAP
2-Fluorophenol	EPA-8270	47.1	03/30/2015	GAP
Phenol-d5	EPA-8270	29.2	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	83.6	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	74.0	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	111	03/30/2015	GAP
Terphenyl-d14	EPA-8270	94.8	03/30/2015	GAP
DCB	EPA-8082	84.0	04/06/2015	CAS
TCMX	EPA-8081	66.0	04/03/2015	CAS
DCB	EPA-8081	81.0	04/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-11
CLIENT SAMPLE ID	FPP-MW-1-1-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	950	130	1	ug/L	03/25/2015	EBS
TPH-Diesel Range	NWTPH-DX	3000	130	1	ug/L	03/25/2015	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	620	250	1	ug/L	03/25/2015	EBS
TPH-Oil Range	NWTPH-DX	1100	250	1	ug/L	03/25/2015	EBS
Naphthalene	EPA-8270 SIM	0.052	0.013	1	ug/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	03/31/2015	GAP
Pentachlorophenol	EPA-8270 SIM	0.22	0.12	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	0.13	0.01	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	0.020	0.0068	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	0.019	0.013	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	0.019	0.019	1	ug/L	03/31/2015	GAP
Total Dissolved Solids	SM2540C	320	5.0	1	MG/L	03/31/2015	DLC
Chloride	EPA-300.0	30	0.92	10	MG/L	03/31/2015	DNT
Fluoride	EPA-300.0	0.27	0.16	1	MG/L	03/25/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/25/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/25/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/25/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	03/27/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	03/25/2015	RAL
Arsenic	EPA-200.8	2.6	0.45	1	ug/L	03/27/2015	RAL
Barium	EPA-200.8	73	1.0	1	ug/L	03/27/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium	EPA-200.8	53000	100	1	ug/L	03/27/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron	EPA-200.8	35000	50	1	ug/L	03/27/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-11
CLIENT SAMPLE ID	FPP-MW-1-1-032415	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium	EPA-200.8	15000	50	1	ug/L	03/27/2015	RAL
Manganese	EPA-200.8	2900	2.0	1	ug/L	03/27/2015	RAL
Potassium	EPA-200.8	6700	50	1	ug/L	03/27/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium	EPA-200.8	45000	50	1	ug/L	03/27/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.0	0.45	1	ug/L	03/27/2015	RAL
Barium (Dissolved)	EPA-200.8	63	1.0	1	ug/L	03/27/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium (Dissolved)	EPA-200.8	50000	100	1	ug/L	03/27/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron (Dissolved)	EPA-200.8	32000	50	1	ug/L	03/27/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium (Dissolved)	EPA-200.8	14000	50	1	ug/L	03/27/2015	RAL
Manganese (Dissolved)	EPA-200.8	2700	2.0	1	ug/L	03/27/2015	RAL
Potassium (Dissolved)	EPA-200.8	6400	50	1	ug/L	03/27/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium (Dissolved)	EPA-200.8	42000	50	1	ug/L	03/27/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	260	0.0	1	MG/L	03/31/2015	CAS
Bicarbonate as CaCO3	SM2320B	260	0.0	1	MG/L	03/31/2015	CAS
Ammonia as N	EPA-350.1	3.1	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	15	10	20	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	108	03/25/2015	EBS
C25	NWTPH-DX	94.1	03/25/2015	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	124	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	51.6	03/31/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered diesel and lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-12
		DATE RECEIVED:	03/25/2015
CLIENT SAMPLE ID	Trip Blanks	COLLECTION DATE:	3/24/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	03/26/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	03/26/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	03/26/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	03/26/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	03/26/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	03/26/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	03/26/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	03/26/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	03/26/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	03/26/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	03/26/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	03/26/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	03/26/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	03/26/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030127-12
CLIENT SAMPLE ID	Trip Blanks	DATE RECEIVED:	03/25/2015
		COLLECTION DATE:	3/24/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	EPA-8260	U	10	1	ug/L	03/26/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	03/26/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	03/26/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	03/26/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	03/26/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	03/26/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	03/26/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/26/2015	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	100	03/26/2015	DLC
Toluene-d8	EPA-8260	95.3	03/26/2015	DLC
4-Bromofluorobenzene	EPA-8260	99.7	03/26/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030127
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MB-032515W - Batch 91748 - Water by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/25/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-031915W - Batch 91631 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	130	1	ug/L	03/19/2015	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	ug/L	03/19/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032415W - Batch 91726 - Water by EPA-8260 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	03/24/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	03/24/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	03/24/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	03/24/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	03/24/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	03/24/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/24/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	03/24/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/24/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/24/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	03/24/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032415W - Batch 91726 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015 ALS SDG#: EV15030127 WDOE ACCREDITATION: C601
CLIENT CONTACT:	Jeffrey Fellows	
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	

LABORATORY BLANK RESULTS

MB-032415W - Batch 91726 - Water by EPA-8260

Acetone	EPA-8260	U	25	1	ug/L	03/24/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	03/24/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	03/24/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	03/24/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	03/24/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	03/24/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	03/24/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	03/24/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	03/24/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	03/24/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	03/24/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	03/24/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	03/24/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	03/24/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030127
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MB-032415W - Batch 91726 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	03/24/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	03/24/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/24/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032515W - Batch 91884 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.012	1	ug/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.0089	1	ug/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0067	1	ug/L	03/31/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.17	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.023	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.040	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.035	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.025	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.022	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.015	1	ug/L	03/31/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032615W - Batch 91897 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.012	1	ug/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015 ALS SDG#: EV15030127 WDOE ACCREDITATION: C601
CLIENT CONTACT:	Jeffrey Fellows	
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	

LABORATORY BLANK RESULTS

MB-032615W - Batch 91897 - Water by EPA-8270 SIM

2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.0089	1	ug/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0067	1	ug/L	03/31/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.17	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.023	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.040	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.035	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.025	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.022	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.015	1	ug/L	03/31/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032515W - Batch 91898 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-032515W - Batch 91898 - Water by EPA-8270

Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.90	1	ug/L	03/30/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.6	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.81	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/06/2015 - Batch R253751 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030127
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MB1-04/06/2015 - Batch R253751 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/04/2015 - Batch R253753 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
G-BHC	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
B-BHC	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Heptachlor	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
D-BHC	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Aldrin	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Chlordane	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Endosulfan I	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
4,4'-DDE	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Dieldrin	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Endrin	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
4,4'-DDD	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Endosulfan II	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
4,4'-DDT	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Methoxychlor	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.0099	1	ug/L	04/04/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	04/04/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-251946 - Batch R251946 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	03/27/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030127
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MBLK-3312015 - Batch R251950 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	03/31/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-3252015 - Batch R252413 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	03/25/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/25/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/25/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/25/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/25/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-3312015 - Batch R252415 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	03/31/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-3272015 - Batch R252061 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.11	1	ug/L	03/27/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-3252015 - Batch R252062 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	03/25/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032515W - Batch 91791 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	0.45	1	ug/L	03/27/2015	RAL
Barium	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030127
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MB-032515W - Batch 91791 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Calcium	EPA-200.8	U	100	1	ug/L	03/27/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron	EPA-200.8	U	50	1	ug/L	03/27/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium	EPA-200.8	U	50	1	ug/L	03/27/2015	RAL
Manganese	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Potassium	EPA-200.8	U	50	1	ug/L	03/27/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium	EPA-200.8	U	50	1	ug/L	03/27/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032515W - Batch 91792 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	03/27/2015	RAL
Barium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/27/2015	RAL
Calcium (Dissolved)	EPA-200.8	U	100	1	ug/L	03/27/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	03/27/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/27/2015	RAL
Magnesium (Dissolved)	EPA-200.8	U	50	1	ug/L	03/27/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/27/2015	RAL
Potassium (Dissolved)	EPA-200.8	U	50	1	ug/L	03/27/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/27/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/27/2015	RAL
Sodium (Dissolved)	EPA-200.8	U	50	1	ug/L	03/27/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-03/31/2015 - Batch R253747 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	03/31/2015	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	03/31/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB1-04/06/2015 - Batch R253750 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-03/27/2015 - Batch R253748 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	03/27/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 91631 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	87.9			03/19/2015	EBS
TPH-Diesel Range - BSD	NWTPH-DX	96.0	9		03/19/2015	EBS

ALS Test Batch ID: 91726 - Water by EPA-8260 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Trichloroethene - BS	EPA-8260 SIM	97.4			03/24/2015	DLC
Trichloroethene - BSD	EPA-8260 SIM	93.2	4		03/24/2015	DLC

ALS Test Batch ID: 91726 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	92.4			03/24/2015	DLC
1,1-Dichloroethene - BSD	EPA-8260	86.0	7		03/24/2015	DLC
Benzene - BS	EPA-8260	91.5			03/24/2015	DLC
Benzene - BSD	EPA-8260	84.4	8		03/24/2015	DLC
Toluene - BS	EPA-8260	90.3			03/24/2015	DLC
Toluene - BSD	EPA-8260	84.9	6		03/24/2015	DLC
Chlorobenzene - BS	EPA-8260	86.2			03/24/2015	DLC
Chlorobenzene - BSD	EPA-8260	83.1	4		03/24/2015	DLC

ALS Test Batch ID: 91897 - Water by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	EPA-8270 SIM	82.8			03/31/2015	GAP
Naphthalene - BSD	EPA-8270 SIM	89.6	8		03/31/2015	GAP
Acenaphthene - BS	EPA-8270 SIM	89.8			03/31/2015	GAP
Acenaphthene - BSD	EPA-8270 SIM	98.6	9		03/31/2015	GAP
Pentachlorophenol - BS	EPA-8270 SIM	71.9			03/31/2015	GAP
Pentachlorophenol - BSD	EPA-8270 SIM	76.4	6		03/31/2015	GAP
Pyrene - BS	EPA-8270 SIM	94.7			03/31/2015	GAP
Pyrene - BSD	EPA-8270 SIM	110	15		03/31/2015	GAP
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	96.0			03/31/2015	GAP
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	103	7		03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 91898 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	34.5			03/30/2015	GAP
Phenol - BSD	EPA-8270	34.4	0		03/30/2015	GAP
2-Chlorophenol - BS	EPA-8270	92.0			03/30/2015	GAP
2-Chlorophenol - BSD	EPA-8270	92.8	1		03/30/2015	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	189		SQ1	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	195	3	SQ1	03/30/2015	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	97.0			03/30/2015	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	100	3		03/30/2015	GAP
4-Nitrophenol - BS	EPA-8270	19.5			03/30/2015	GAP
4-Nitrophenol - BSD	EPA-8270	17.3	12		03/30/2015	GAP
2,4-Dinitrotoluene - BS	EPA-8270	86.1			03/30/2015	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	83.7	3		03/30/2015	GAP
Pyrene - BS	EPA-8270	120			03/30/2015	GAP
Pyrene - BSD	EPA-8270	128	6		03/30/2015	GAP

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

ALS Test Batch ID: R253751 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	84.5			04/06/2015	CAS
PCB-1016 - BSD	EPA-8082	70.0	19		04/06/2015	CAS
PCB-1260 - BS	EPA-8082	122		SQ1	04/06/2015	CAS
PCB-1260 - BSD	EPA-8082	111	9		04/06/2015	CAS

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

ALS Test Batch ID: R253753 - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	84.5			04/03/2015	CAS
A-BHC - BSD	EPA-8081	72.5	15		04/03/2015	CAS
G-BHC - BS	EPA-8081	84.5			04/03/2015	CAS
G-BHC - BSD	EPA-8081	73.0	15		04/03/2015	CAS
B-BHC - BS	EPA-8081	85.0			04/03/2015	CAS
B-BHC - BSD	EPA-8081	73.5	15		04/03/2015	CAS
Heptachlor - BS	EPA-8081	79.5			04/03/2015	CAS
Heptachlor - BSD	EPA-8081	69.5	13		04/03/2015	CAS
D-BHC - BS	EPA-8081	87.0			04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
D-BHC - BSD	EPA-8081	74.5	15		04/03/2015	CAS
Aldrin - BS	EPA-8081	67.0			04/03/2015	CAS
Aldrin - BSD	EPA-8081	55.5	19		04/03/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	83.5			04/03/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	72.5	14		04/03/2015	CAS
Chlordane - BS	EPA-8081	80.0			04/03/2015	CAS
Chlordane - BSD	EPA-8081	69.5	14		04/03/2015	CAS
Endosulfan I - BS	EPA-8081	62.0			04/03/2015	CAS
Endosulfan I - BSD	EPA-8081	54.0	14		04/03/2015	CAS
4,4'-DDE - BS	EPA-8081	81.0			04/03/2015	CAS
4,4'-DDE - BSD	EPA-8081	70.0	15		04/03/2015	CAS
Dieldrin - BS	EPA-8081	84.5			04/03/2015	CAS
Dieldrin - BSD	EPA-8081	73.0	15		04/03/2015	CAS
Endrin - BS	EPA-8081	89.5			04/03/2015	CAS
Endrin - BSD	EPA-8081	77.0	15		04/03/2015	CAS
4,4'-DDD - BS	EPA-8081	83.0			04/03/2015	CAS
4,4'-DDD - BSD	EPA-8081	72.0	14		04/03/2015	CAS
Endosulfan II - BS	EPA-8081	67.5			04/03/2015	CAS
Endosulfan II - BSD	EPA-8081	58.5	14		04/03/2015	CAS
4,4'-DDT - BS	EPA-8081	88.0			04/03/2015	CAS
4,4'-DDT - BSD	EPA-8081	76.5	14		04/03/2015	CAS
Endrin Aldehyde - BS	EPA-8081	82.5			04/03/2015	CAS
Endrin Aldehyde - BSD	EPA-8081	72.0	14		04/03/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	83.5			04/03/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	72.5	14		04/03/2015	CAS
Methoxychlor - BS	EPA-8081	85.5			04/03/2015	CAS
Methoxychlor - BSD	EPA-8081	75.5	12		04/03/2015	CAS
Hexachlorobenzene - BS	EPA-8081	82.0			04/03/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	71.0	14		04/03/2015	CAS
Toxaphene - BS	EPA-8081	98.9			04/03/2015	CAS
Toxaphene - BSD	EPA-8081	91.1	8		04/04/2015	CAS

ALS Test Batch ID: R251946 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	96.0			03/27/2015	DNT



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R251950 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	96.0			03/31/2015	DLC

ALS Test Batch ID: R252413 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	96.0			03/25/2015	DNT
Chloride - BSD	EPA-300.0	97.0	1		03/25/2015	DNT
Fluoride - BS	EPA-300.0	103			03/25/2015	DNT
Fluoride - BSD	EPA-300.0	103	0		03/25/2015	DNT
Nitrate as N - BS	EPA-300.0	105			03/25/2015	DNT
Nitrate as N - BSD	EPA-300.0	103	2		03/25/2015	DNT
Nitrite as N - BS	EPA-300.0	94.0			03/25/2015	DNT
Nitrite as N - BSD	EPA-300.0	96.0	2		03/25/2015	DNT
Sulfate - BS	EPA-300.0	100			03/25/2015	DNT
Sulfate - BSD	EPA-300.0	105	5		03/25/2015	DNT

ALS Test Batch ID: R252415 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	95.0			03/31/2015	DNT
Chloride - BSD	EPA-300.0	95.0	0		03/31/2015	DNT

ALS Test Batch ID: R252061 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	94.0			03/27/2015	RAL
Mercury - BSD	EPA-7470	94.0	0		03/27/2015	RAL

ALS Test Batch ID: R252062 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	119			03/25/2015	RAL
Mercury (Dissolved) - BSD	EPA-7470	118	1		03/25/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 91791 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	102			03/27/2015	RAL
Arsenic - BSD	EPA-200.8	107	5		03/27/2015	RAL
Barium - BS	EPA-200.8	104			03/27/2015	RAL
Barium - BSD	EPA-200.8	106	2		03/27/2015	RAL
Cadmium - BS	EPA-200.8	105			03/27/2015	RAL
Cadmium - BSD	EPA-200.8	105	0		03/27/2015	RAL
Calcium - BS	EPA-200.8	102			03/27/2015	RAL
Calcium - BSD	EPA-200.8	103	1		03/27/2015	RAL
Chromium - BS	EPA-200.8	103			03/27/2015	RAL
Chromium - BSD	EPA-200.8	105	2		03/27/2015	RAL
Iron - BS	EPA-200.8	103			03/27/2015	RAL
Iron - BSD	EPA-200.8	104	1		03/27/2015	RAL
Lead - BS	EPA-200.8	101			03/27/2015	RAL
Lead - BSD	EPA-200.8	104	2		03/27/2015	RAL
Magnesium - BS	EPA-200.8	101			03/27/2015	RAL
Magnesium - BSD	EPA-200.8	103	2		03/27/2015	RAL
Manganese - BS	EPA-200.8	104			03/27/2015	RAL
Manganese - BSD	EPA-200.8	106	3		03/27/2015	RAL
Potassium - BS	EPA-200.8	103			03/27/2015	RAL
Potassium - BSD	EPA-200.8	103	0		03/27/2015	RAL
Selenium - BS	EPA-200.8	101			03/27/2015	RAL
Selenium - BSD	EPA-200.8	108	7		03/27/2015	RAL
Silver - BS	EPA-200.8	106			03/27/2015	RAL
Silver - BSD	EPA-200.8	107	1		03/27/2015	RAL
Sodium - BS	EPA-200.8	100			03/27/2015	RAL
Sodium - BSD	EPA-200.8	101	1		03/27/2015	RAL

ALS Test Batch ID: 91792 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	102			03/27/2015	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	107	5		03/27/2015	RAL
Barium (Dissolved) - BS	EPA-200.8	104			03/27/2015	RAL
Barium (Dissolved) - BSD	EPA-200.8	106	2		03/27/2015	RAL
Cadmium (Dissolved) - BS	EPA-200.8	105			03/27/2015	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	105	0		03/27/2015	RAL
Calcium (Dissolved) - BS	EPA-200.8	102			03/27/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Calcium (Dissolved) - BSD	EPA-200.8	103	1		03/27/2015	RAL
Chromium (Dissolved) - BS	EPA-200.8	103			03/27/2015	RAL
Chromium (Dissolved) - BSD	EPA-200.8	105	2		03/27/2015	RAL
Iron (Dissolved) - BS	EPA-200.8	103			03/27/2015	RAL
Iron (Dissolved) - BSD	EPA-200.8	104	1		03/27/2015	RAL
Lead (Dissolved) - BS	EPA-200.8	101			03/27/2015	RAL
Lead (Dissolved) - BSD	EPA-200.8	104	2		03/27/2015	RAL
Magnesium (Dissolved) - BS	EPA-200.8	101			03/27/2015	RAL
Magnesium (Dissolved) - BSD	EPA-200.8	103	2		03/27/2015	RAL
Manganese (Dissolved) - BS	EPA-200.8	104			03/27/2015	RAL
Manganese (Dissolved) - BSD	EPA-200.8	106	3		03/27/2015	RAL
Potassium (Dissolved) - BS	EPA-200.8	103			03/27/2015	RAL
Potassium (Dissolved) - BSD	EPA-200.8	103	0		03/27/2015	RAL
Selenium (Dissolved) - BS	EPA-200.8	101			03/27/2015	RAL
Selenium (Dissolved) - BSD	EPA-200.8	108	7		03/27/2015	RAL
Silver (Dissolved) - BS	EPA-200.8	106			03/27/2015	RAL
Silver (Dissolved) - BSD	EPA-200.8	107	1		03/27/2015	RAL
Sodium (Dissolved) - BS	EPA-200.8	100			03/27/2015	RAL
Sodium (Dissolved) - BSD	EPA-200.8	101	1		03/27/2015	RAL

ALS Test Batch ID: R253747 - Water by SM2320B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total - BS	SM2320B	104			03/31/2015	CAS

ALS Test Batch ID: R253750 - Water by EPA-350.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N 5X Dilution - BS	EPA-350.1	98.7			04/06/2015	CAS

ALS Test Batch ID: R253748 - Water by SM5310C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - BS	SM5310C	101			03/27/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030127
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

MATRIX SPIKE RESULTS

ALS Test Batch ID: R253748 - Water

Parent Sample: MW-14-032315

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - MS	SM5310C	0.77	25.0	26.3		102		03/27/2015	CAS

ALS Test Batch ID: R253750 - Water

Parent Sample: MW-14-032315

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N - MS	EPA-350.1	0	2.00	2.03		102		04/06/2015	CAS
Ammonia as N - MSD	EPA-350.1	0	2.00	2.01	1	100		04/06/2015	CAS

APPROVED BY



Laboratory Director



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080
- _____

Chain-of-Custody Record

EV15030127

pg 1B

Date 3/23/15
Page 2 of 2

Project Name <u>Closed City of Yakima Landfill</u> Project No. <u>114808.030.032</u>					Testing Parameters										Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____	
Project Location/Event <u>Closed Yakima Landfill WA / 3rd Quarter GW</u>					<div style="display: flex; justify-content: space-around;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Conventional/IDS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Alkalinity</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Bicarbonate</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Ammonia/Total</div> </div>											
Sampler's Name <u>Stephanie Renando, Shane Kostka</u>																
Project Contact <u>Jeffrey Fellows</u>																
Send Results To <u>J. Fellows, A. Halvorsen, K. Schultz</u>																
Sample I.D.	Date	Time	Matrix	No. of Containers											Observations/Comments	
1 MW-14-032315	3/23/15	1305	AG	9	X	X	X	X								<input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion <input type="checkbox"/> NWTPH-Dx - run acid wash silica gel cleanup
2 MW-15-032315	↓	1330	↓	14	X	X	X	X								
3 MW-16-032315	↓	1530	↓	9	X	X	X	X								<input type="checkbox"/> Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt <input type="checkbox"/> Dissolved metal water samples field filtered Other <u>Fluoride, Nitrate, Nitrite, Chloride, Sulphate</u>
4 MW-17-032315	↓	1501	↓	14	X	X	X	X								
5 MW-1000032315	↓	1751	↓	14	X	X	X	X								
6 MW-109-032315	↓	1730	↓	14	X	X	X	X								

Special Shipment/Handling or Storage Requirements <u>on ice</u>	Method of Shipment <u>Fed Ex</u>
-----------------------------------------------------------------	----------------------------------

Relinquished by Signature <u>[Signature]</u> Printed Name <u>Stephanie Renando</u> Company <u>Landau Associates</u> Date <u>3/24/15</u> Time <u>0900</u>	Received by Signature <u>[Signature]</u> Printed Name <u>Shawn Robinson</u> Company <u>ALS</u> Date <u>3/25/15</u> Time <u>10:10 am</u>	Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____	Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080
- _____

Chain-of-Custody Record

EV15030127

pg 3
pg 2a

Date 3/24/15
Page 1 of 2

Project Name Closed City of Yakima Landfill Project No. 1149008.030.032

Project Location/Event Closed Yakima Landfill, WA / 3rd Quarter GW

Sampler's Name Stephanie Renando, Shane Kostka

Project Contact Jeffrey Fellows

Send Results To J. Fellows, A. Halvorsen, K. Shultz

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters										Observations/Comments			
					Metals (Total)*	Metals (Dissolved)*	Mercury (Total)	Mercury (Dissolved)	Chlorinated Pesticides	PCB's	VOC's	SVOC's	PAH's	TPH-HCID		TPH-Dx**	TPH-G	
8 MW-6-032415	3/24/15	1055	AQ	8	X	X	X	X							X	O		X Allow water samples to settle, collect aliquot from clear portion
9 MW-106-032415		1355		11	X	X	X	X	X	X	X	X	X	X	X	X		
10 DUP-1-032415		0901		11	X	X	X	X	X	X	X	X	X	X	X	X		— NWTPH-Dx - run acid wash silica gel cleanup
11 AAFPP-MW-1-032415		1500		6	X	X	X	X				X		X	X			
12 Trip Blanks		—		2							X							— Analyze for EPH if no specific product identified
<p><u>Note: Samples for dissolved analytes are field filtered</u></p> <p>VOC/BTEX/VPH (soil):</p> <p>— non-preserved</p> <p>— preserved w/methanol</p> <p>— preserved w/sodium bisulfate</p> <p>— Freeze upon receipt</p> <p>— Dissolved metal water samples field filtered</p> <p>Other *As, Ba, Ca, Cd, Cr, Fe, K, Pb, Mg, Mn, Na, Se, Ag</p> <p>**Run w/ AUD w/out Silica gel cleanup.</p> <p>O=Hold pending HCID Result.</p>																		

Special Shipment/Handling or Storage Requirements On ice Method of Shipment Fed Ex

Relinquished by
Signature [Signature]
Printed Name Stephanie Renando
Company Landau Associates
Date 3/24/15 Time 1600

Received by
Signature [Signature]
Printed Name Shawn Robinson
Company ALS
Date 3/25/15 Time 10:10a

Relinquished by
Signature _____
Printed Name _____
Company _____
Date _____ Time _____

Received by
Signature _____
Printed Name _____
Company _____
Date _____ Time _____



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080
- _____

Chain-of-Custody Record

EV15030127

Date 3/24/15
Page 2 of 2

pg 4
pg 2b

Project Name <u>Closed City of Yakima Landfill</u> Project No. <u>1148008030032</u>					Testing Parameters										Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____				
Project Location/Event <u>Closed Yakima Landfill, WA / 3rd Quarter GW</u>					Conventional's / TDS Alkalinity Bicarbonate Ammonia / Toc's														
Sampler's Name <u>Stephanie Renando, Shane Kostka</u>																			
Project Contact <u>Jeffrey Fellows</u>																			
Send Results To <u>J. Fellows, A. Halvorsen, K. Schultz</u>																			
Sample I.D.	Date	Time	Matrix	No. of Containers											Observations/Comments				
8 MW-6-032415	3/24/15	1055	AG	8	X	X	X	X											<input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion <input type="checkbox"/> NWTPH-Dx - run acid wash silica gel cleanup <input type="checkbox"/> Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt <input type="checkbox"/> Dissolved metal water samples field filtered Other <u>Fluoride, Nitrate, Nitrite, Chloride, Sulphate</u>
9 MW-106-032415	↓	1355	↓	11	X	X	X	X											
10 Dup-1-032415	↓	0901	↓	11	X	X	X	X											
11 FPP-MW-1-032415	↓	1500	↓	6	X	X	X	X											

Special Shipment/Handling or Storage Requirements <u>on ice</u>	Method of Shipment <u>Fed Ex</u>
-----------------------------------------------------------------	----------------------------------

Relinquished by Signature <u>SA Renando</u> Printed Name <u>Stephanie Renando</u> Company <u>Landau Associates</u> Date <u>3/24/15</u> Time <u>1600</u>	Received by Signature <u>Shawn Robinson</u> Printed Name <u>Shawn Robinson</u> Company <u>ALS</u> Date <u>3/25/15</u> Time <u>10:10am</u>	Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____	Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____
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ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV/5030/27

Project: Closed City of Yakima Landfill / # 114008. 030.032

Received Date: 3/25/15 Received Time: 10:10 am By: SM

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals on outside of sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1</u> Where? <u>on top of each cooler</u>			
Custody seal date: <u>3/24/15</u> Seal name: <u>Landau</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: None

Temperature of cooler upon receipt: 3.6°C, 3.1°C, 1.8°C
4.4°C, 2.3°C, 3.4°C 2.2°C all on ice **Cold** Cool Ambient N/A

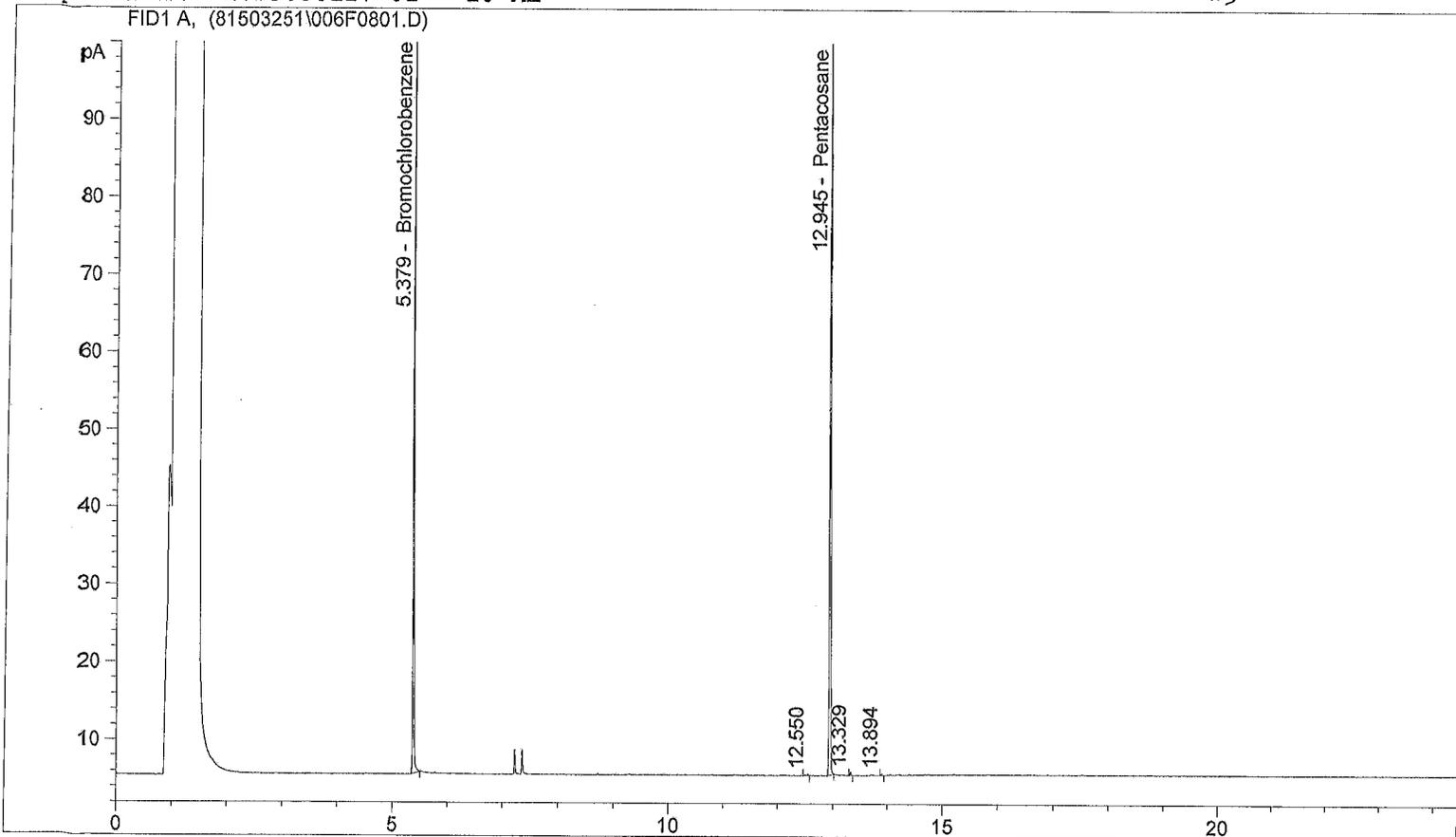
Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\006F0801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 3/25/2015 1:36:09 PM 3/25/2015 1:36:09 PM
 Report Creation: 3/25/2015 2:22:13 PM

Sample Name: EV15030127-01 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.379	FID1 A,	Bromochlorobenzene	132.728	22.963
12.945		Pentacosane	157.913	8.017

92%
80%

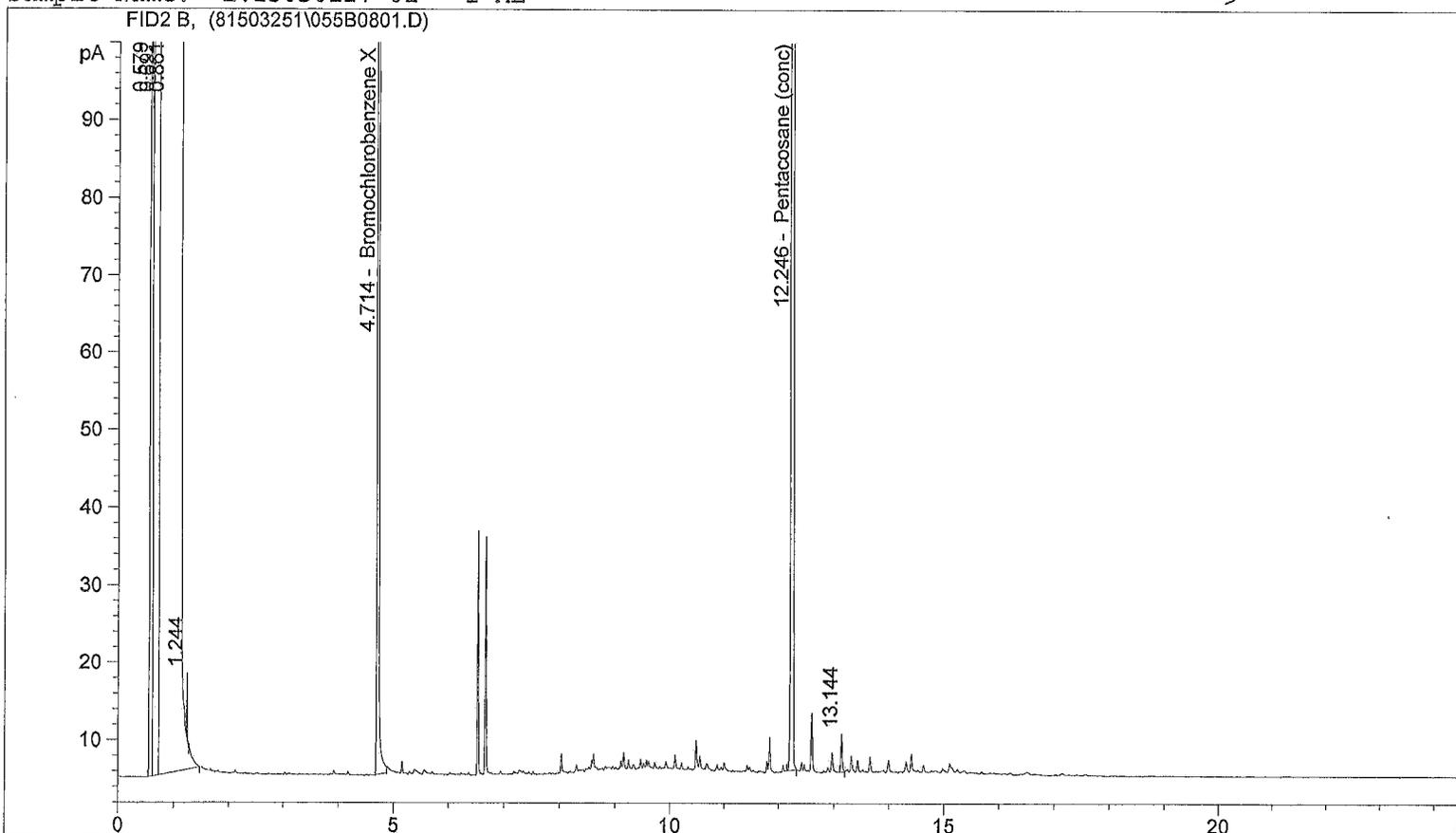
G < 130 ug/L
 D < 310 ug/L

RE BY MB
 E 4/6/15

03.25.15

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\055B0801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/25/2015 1:36:09 PM 3/25/2015 1:36:09 PM
 Report Creation: 3/25/2015 2:22:37 PM

Sample Name: EV15030127-01 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.714	FID2 B,	Bromochlorobenzene X	2415.699	188.086
12.246		Pentacosane (conc)	2943.207	76.390

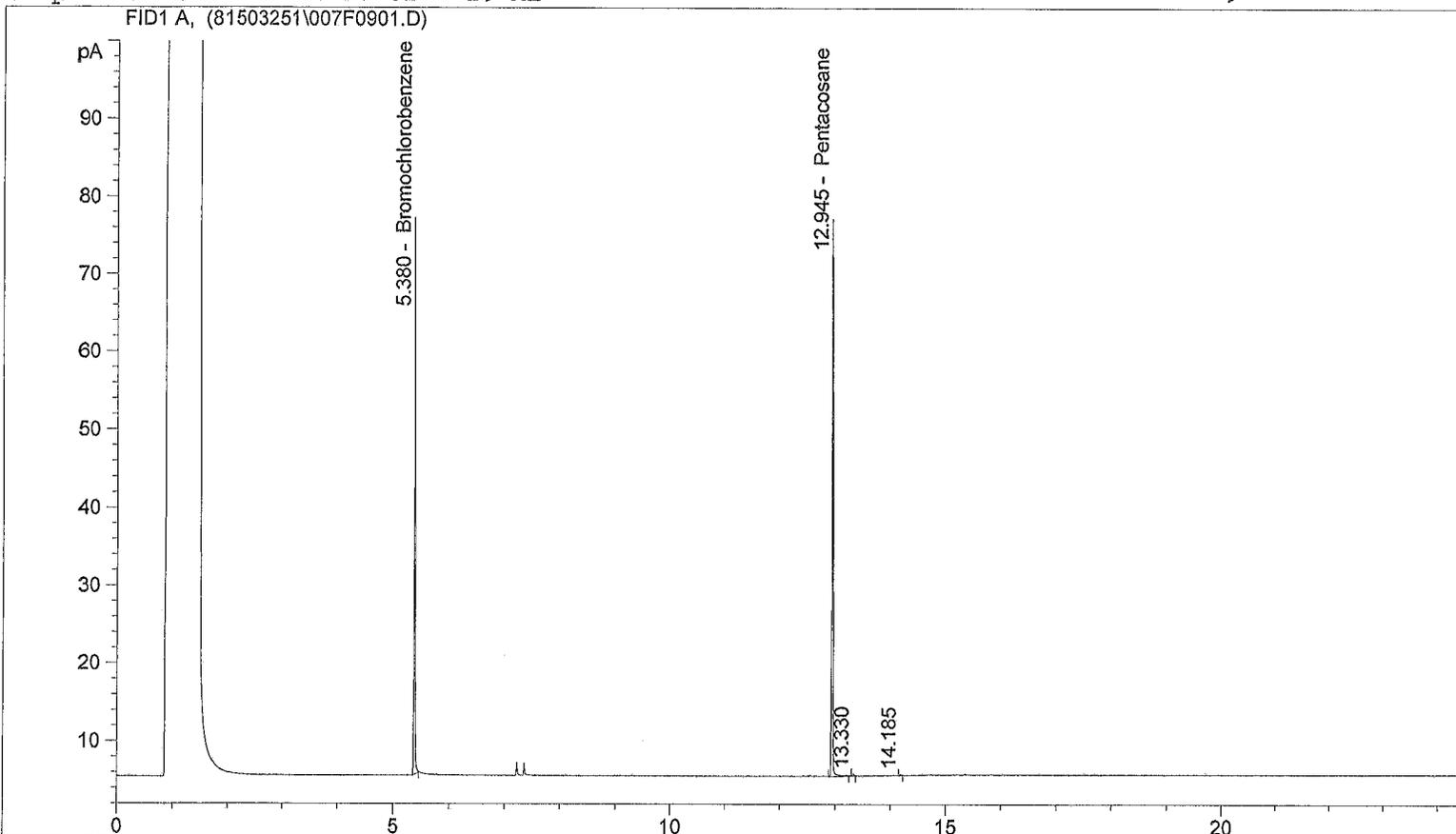
76 f.

0 < 310 µg/L

RE D BY MS
 E 4/6/15

03-25-15 E7

Sample Name: EV15030127-02 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	78.327	13.551
12.945		Pentacosane	100.162	5.085

54%
51%

G < 130 µg/L
 D < 310 µg/L

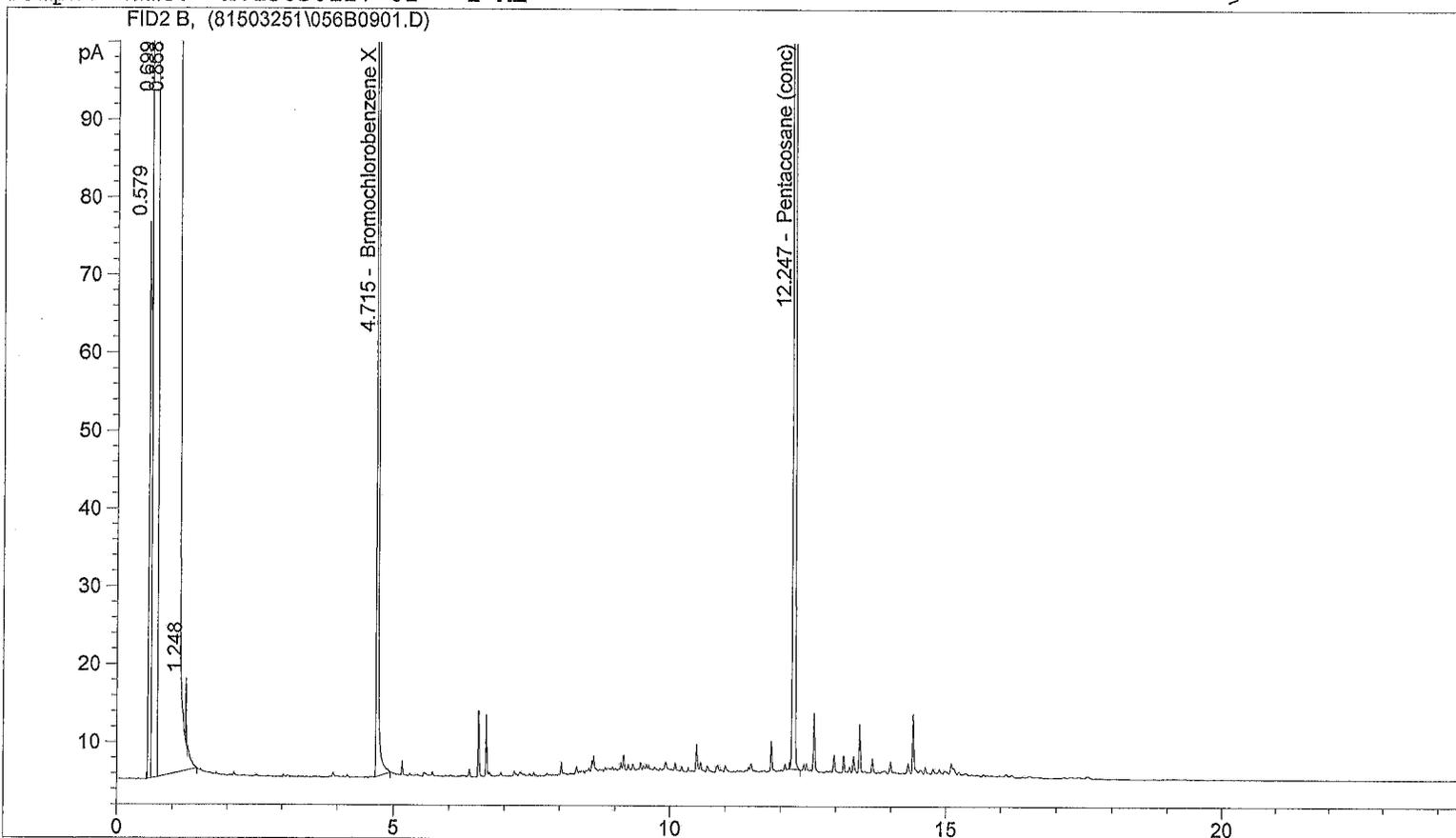
RECEIVED BY *MB*
 DATE *4/6/15*

03.25.15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\056B0901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/25/2015 2:10:26 PM 3/25/2015 2:10:26 PM
 Report Creation: 3/25/2015 3:21:02 PM

Sample Name: EV15030127-02 1 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.715	FID2 B,	Bromochlorobenzene X	2562.749	199.536
12.247		Pentacosane (conc)	3073.438	79.770

80%

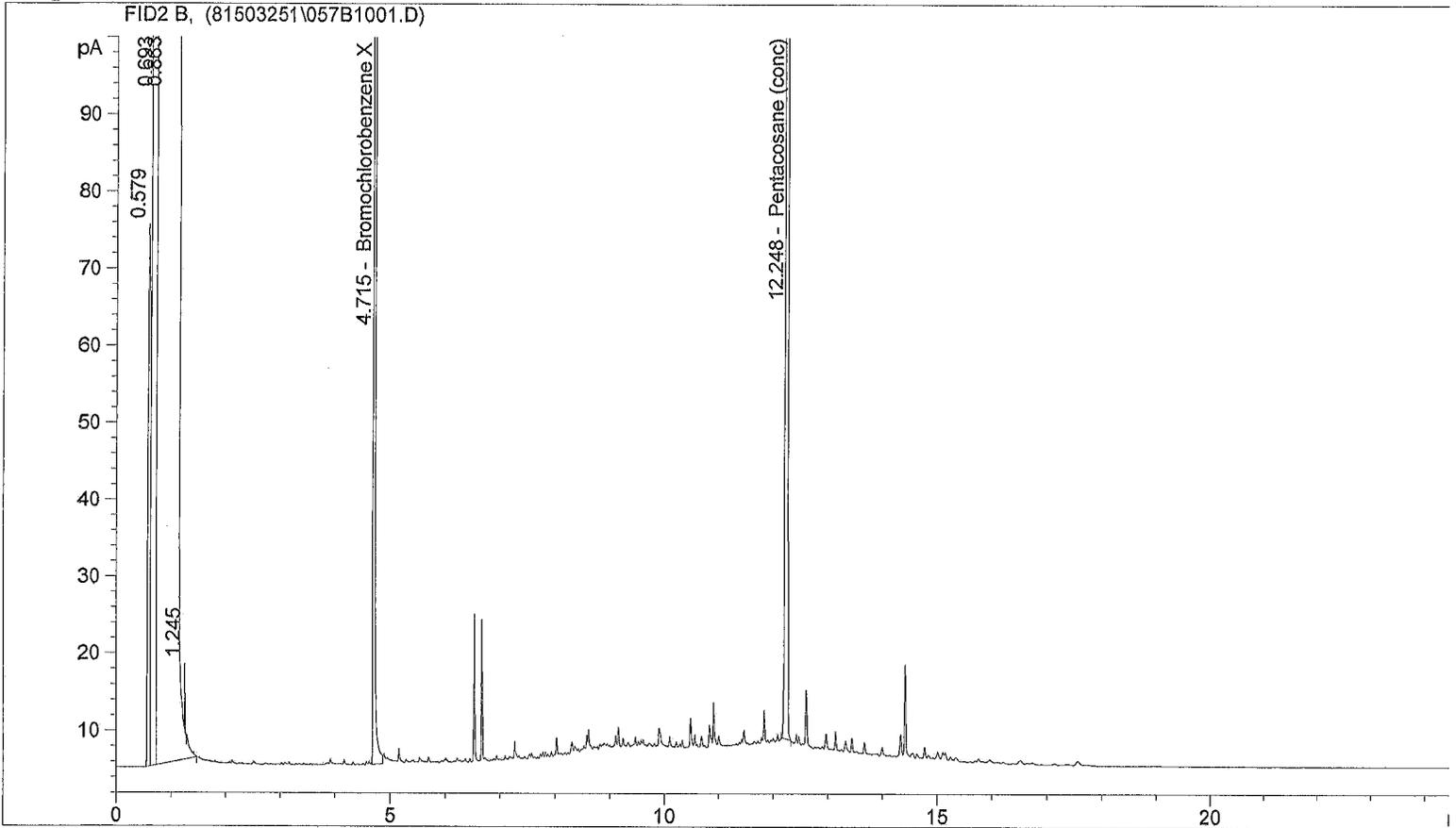
0 < 310 µg/L

RE BY *MS*
 E 4/6/15

03-25-15

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\057B1001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/25/2015 2:45:00 PM 3/25/2015 2:45:00 PM
 Report Creation: 3/25/2015 3:21:18 PM

Sample Name: EV15030127-03 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.715	FID2 B,	Bromochlorobenzene X	2678.362	208.537
12.248		Pentacosane (conc)	3195.878	82.948

83%

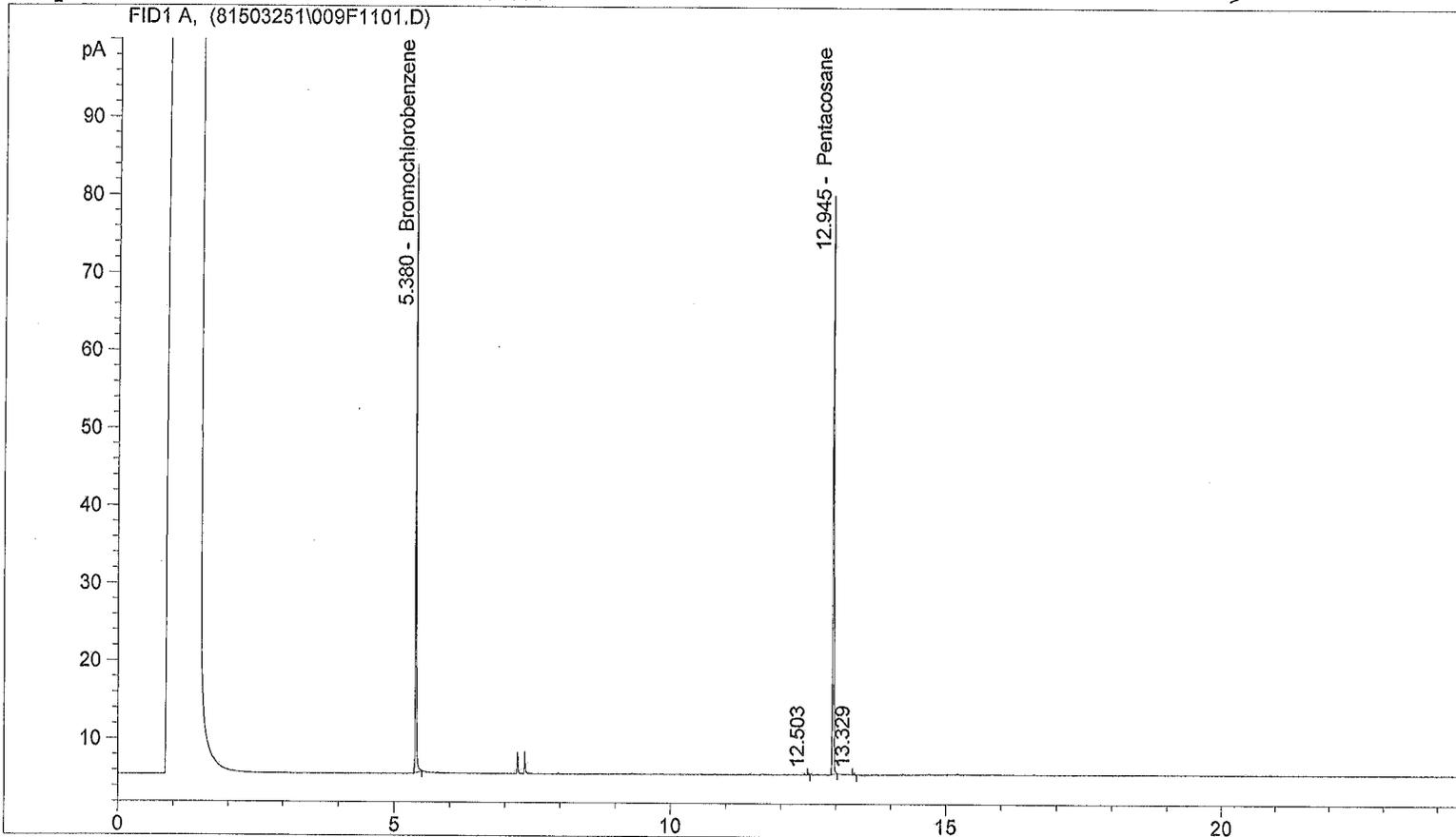
0 < 310 µg/L

RE BY AB
 4/6/5

03.25.15-8

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\009F1101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCLDW.M
 Injection Date & Time: 3/25/2015 3:19:53 PM 3/25/2015 3:19:53 PM
 Report Creation: 3/25/2015 3:46:18 PM

Sample Name: EV15030127-04 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	85.108	14.724
12.945		Pentacosane	100.637	5.109

59%
51%

G < 130 ug/L
D < 310 ug/L

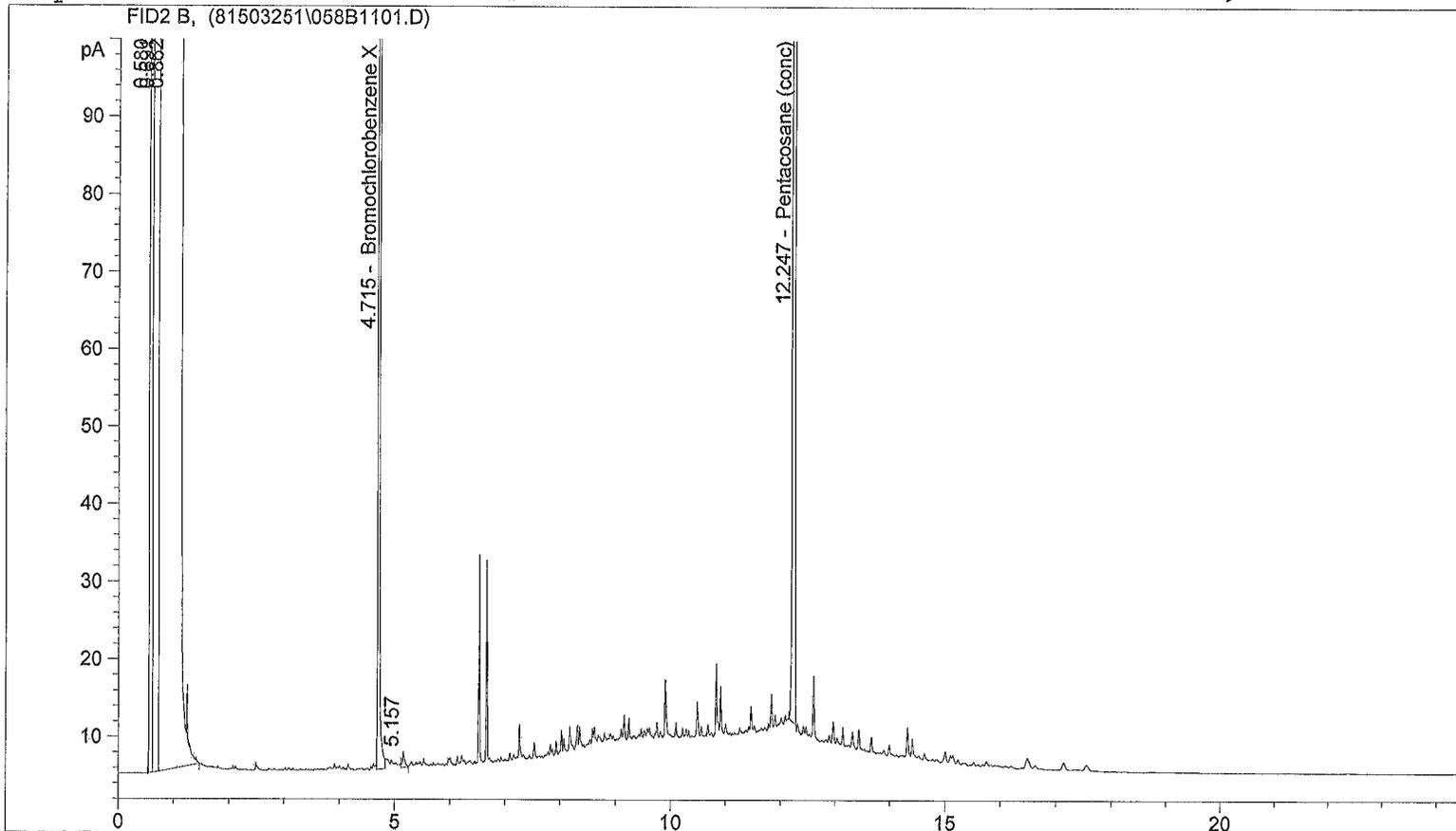
RE	BY	<i>MB</i>
	E	<i>4/6/15</i>

0325-15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\058B1101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/25/2015 3:19:53 PM 3/25/2015 3:19:53 PM
 Report Creation: 3/25/2015 3:47:13 PM

Sample Name: EV15030127-04 1 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.715	FID2 B,	Bromochlorobenzene X	2493.367	194.133
12.247		Pentacosane (conc)	3031.417	78.679

79%

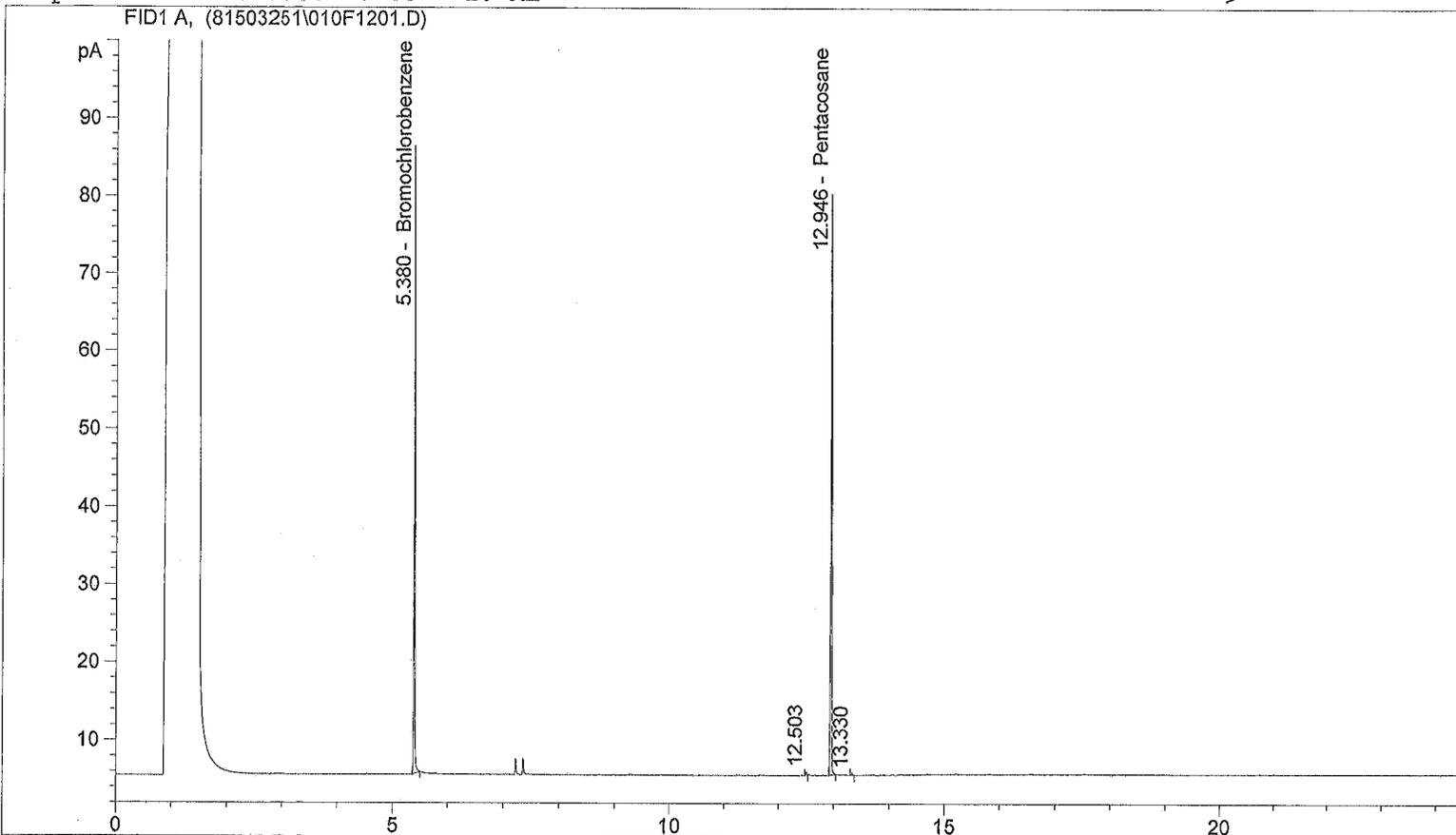
0 < 310 µg/L

RE BY MS
 E 4/6/15

03.25.15EJ

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\010F1201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCLDW.M
 Injection Date & Time: 3/25/2015 3:54:24 PM 3/25/2015 3:54:24 PM
 Report Creation: 3/25/2015 4:22:25 PM

Sample Name: EV15030127-05 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	88.269	15.271
12.946		Pentacosane	100.788	5.117

661/
517/

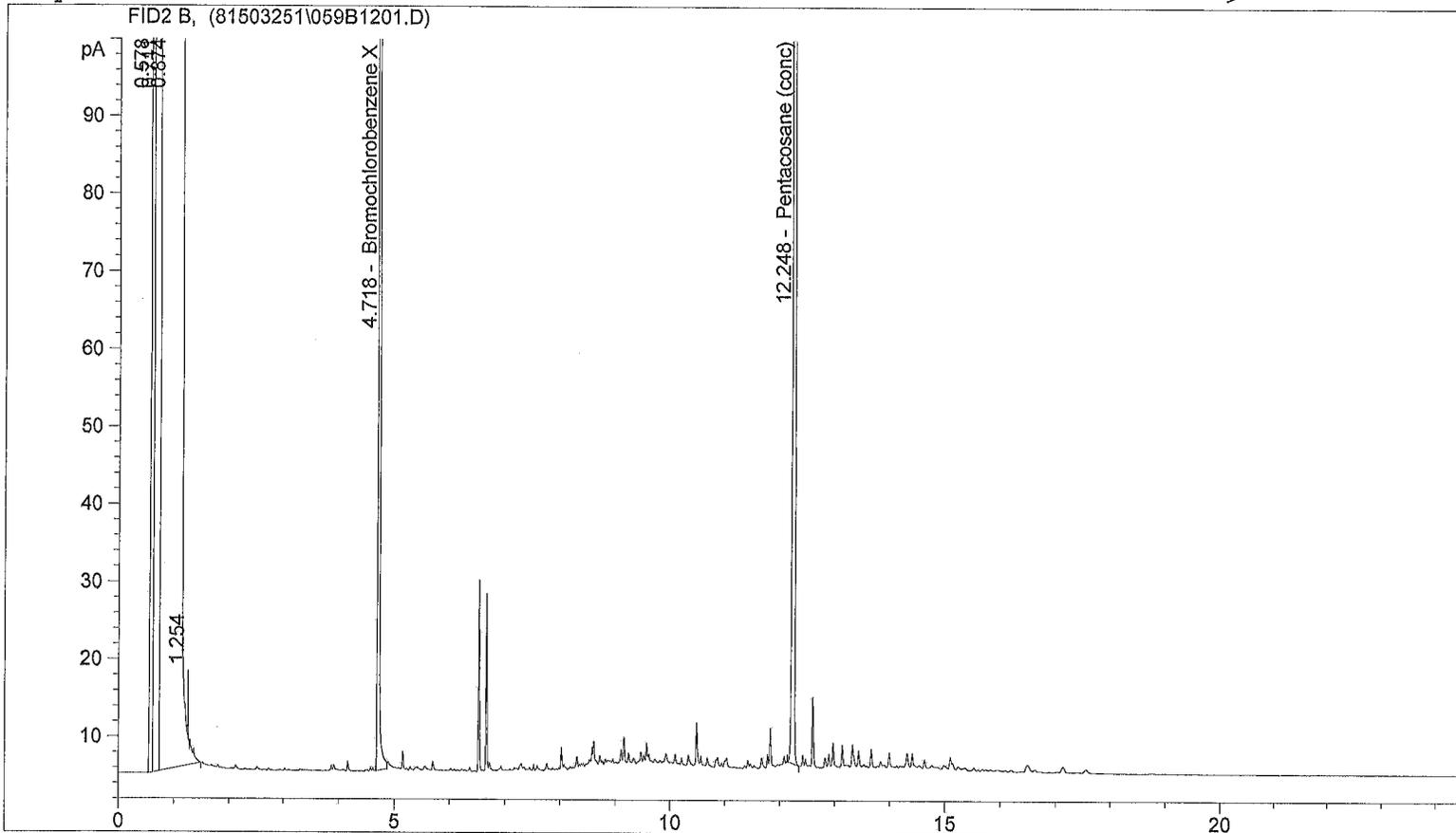
G < 130 ug/L
D < 310 ug/L

RECEIVED BY *AB*
E *4/6/15*

03-25-15

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\059B1201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/25/2015 3:54:24 PM 3/25/2015 3:54:24 PM
 Report Creation: 3/25/2015 4:22:10 PM

Sample Name: EV15030127-05 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.718	FID2 B,	Bromochlorobenzene X	2912.153	226.740
12.248		Pentacosane (conc)	3292.756	85.462

85%

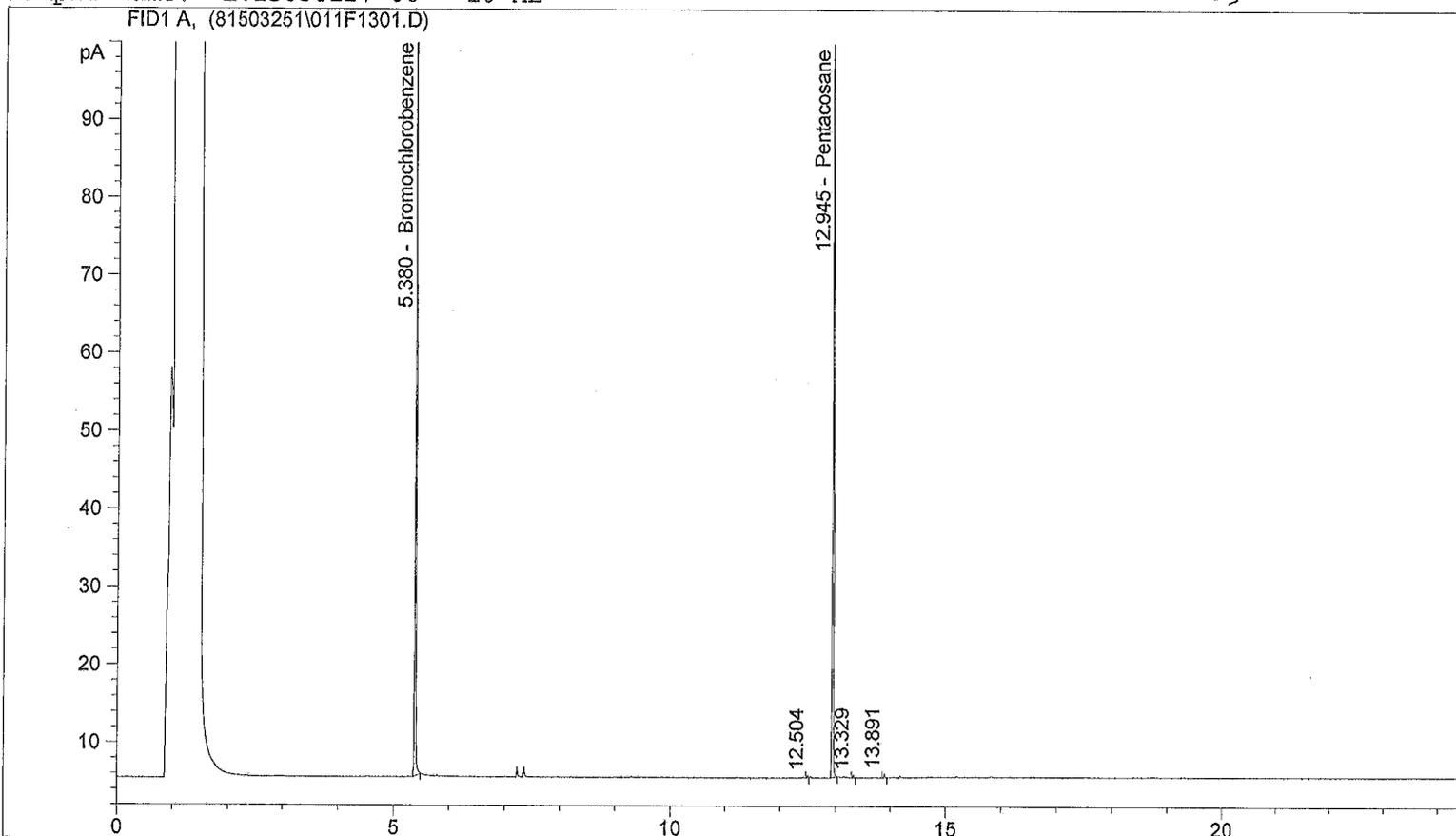
0 < 310 µg/L

RECEIVED BY *MB*
 DATE *4/6/15*

03-25-15 E1

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\011F1301.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCLDW.M
 Injection Date & Time: 3/25/2015 4:29:17 PM 3/25/2015 4:29:17 PM
 Report Creation: 3/25/2015 5:07:30 PM

Sample Name: EV15030127-06 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	136.189	23.562
12.945		Pentacosane	149.155	7.572

94%
76%

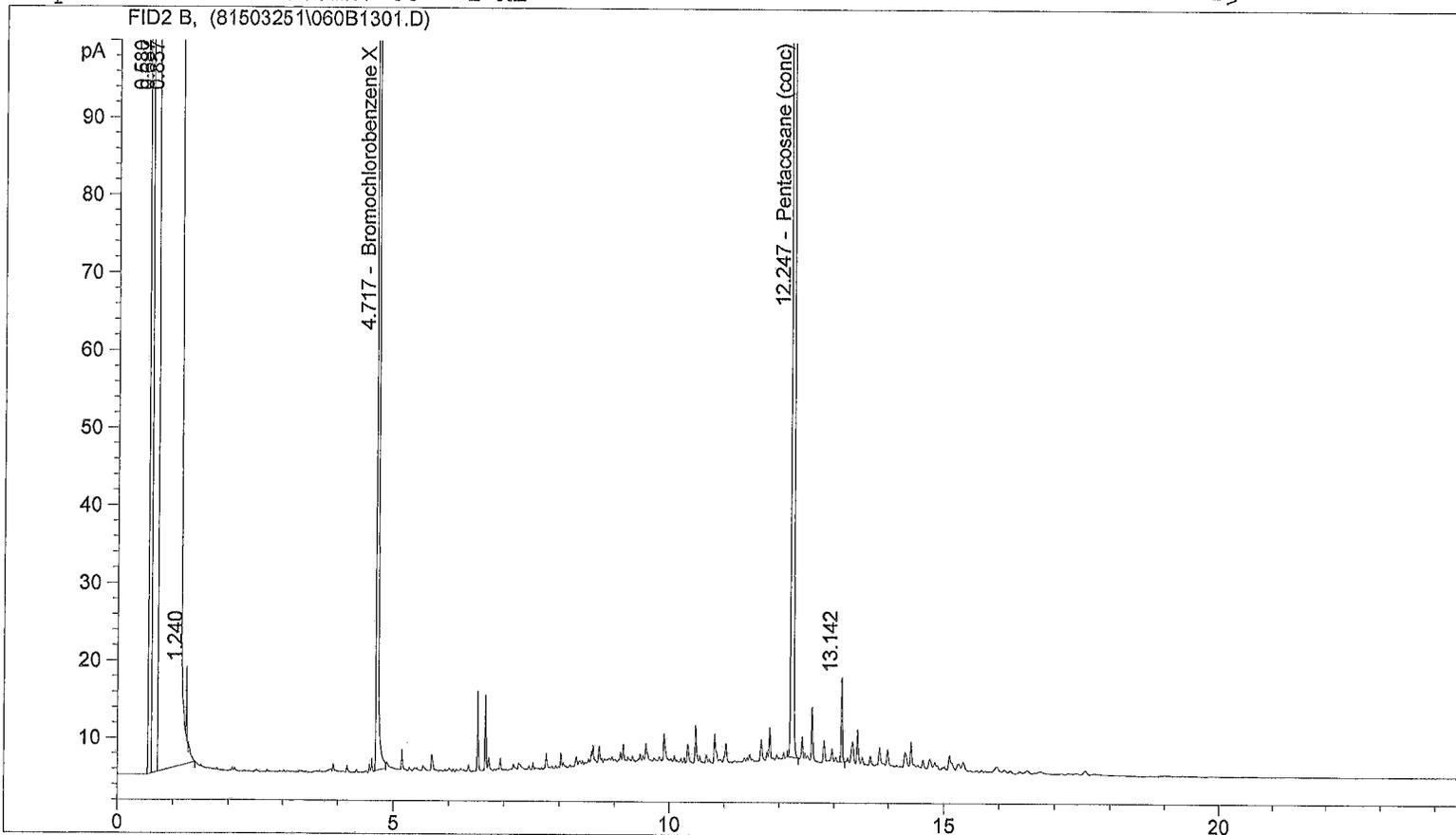
G < 130 µg/L
 D < 310 µg/L

RE BY MS
 E 4/6/15

03-25-15 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\060B1301.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/25/2015 4:29:17 PM 3/25/2015 4:29:17 PM
 Report Creation: 3/25/2015 5:07:53 PM

Sample Name: EV15030127-06 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.717	FID2 B,	Bromochlorobenzene X	2930.324	228.155
12.247		Pentacosane (conc)	3113.885	80.820

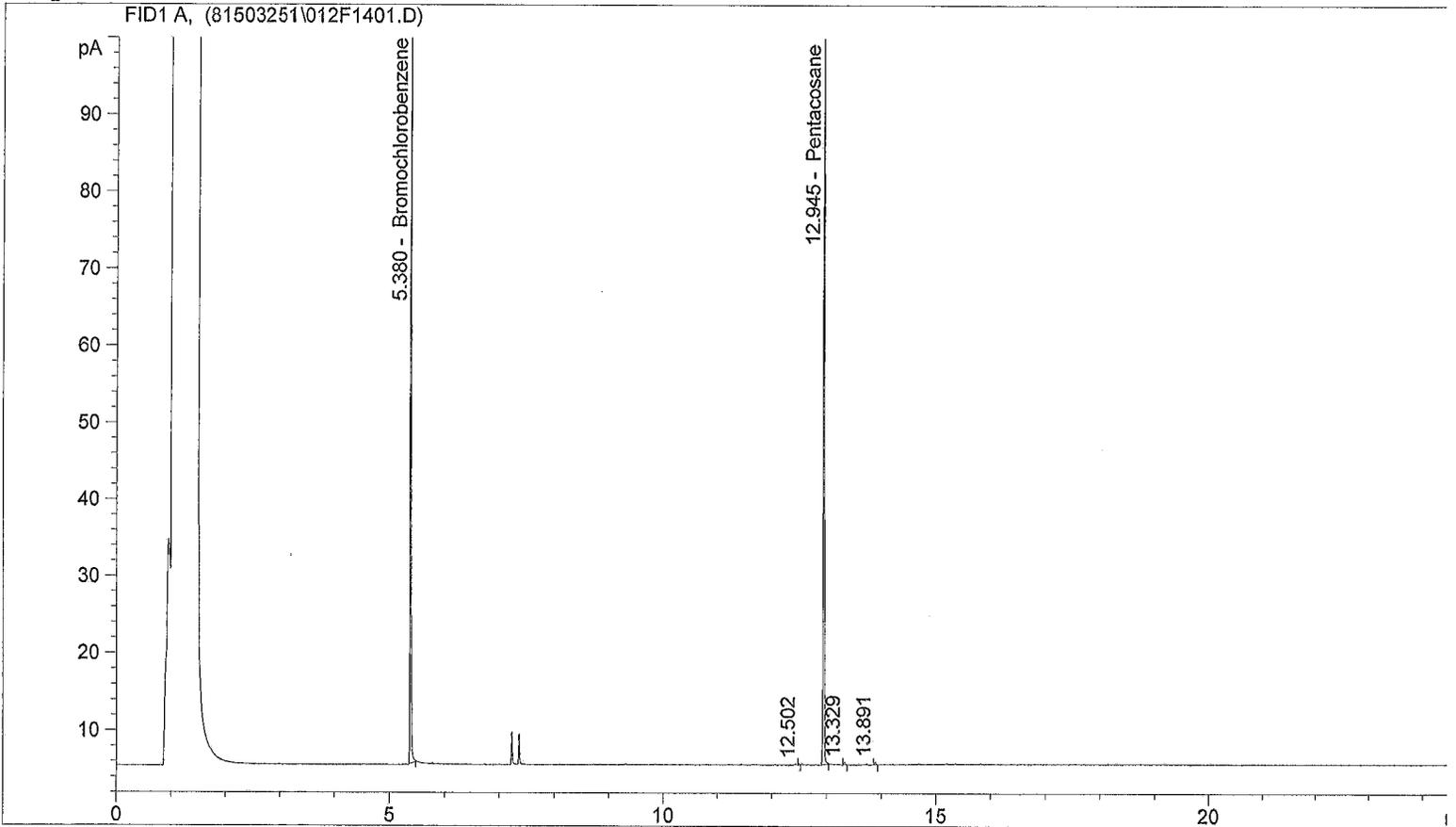
81%

0 < 310 µg/L

RE BY 16
4/6/15

03.25.15

Sample Name: EV15030127-08 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	136.907	23.686
12.945		Pentacosane	149.599	7.595

98%
76%

G < 130 µg/L
 D < 310 µg/L

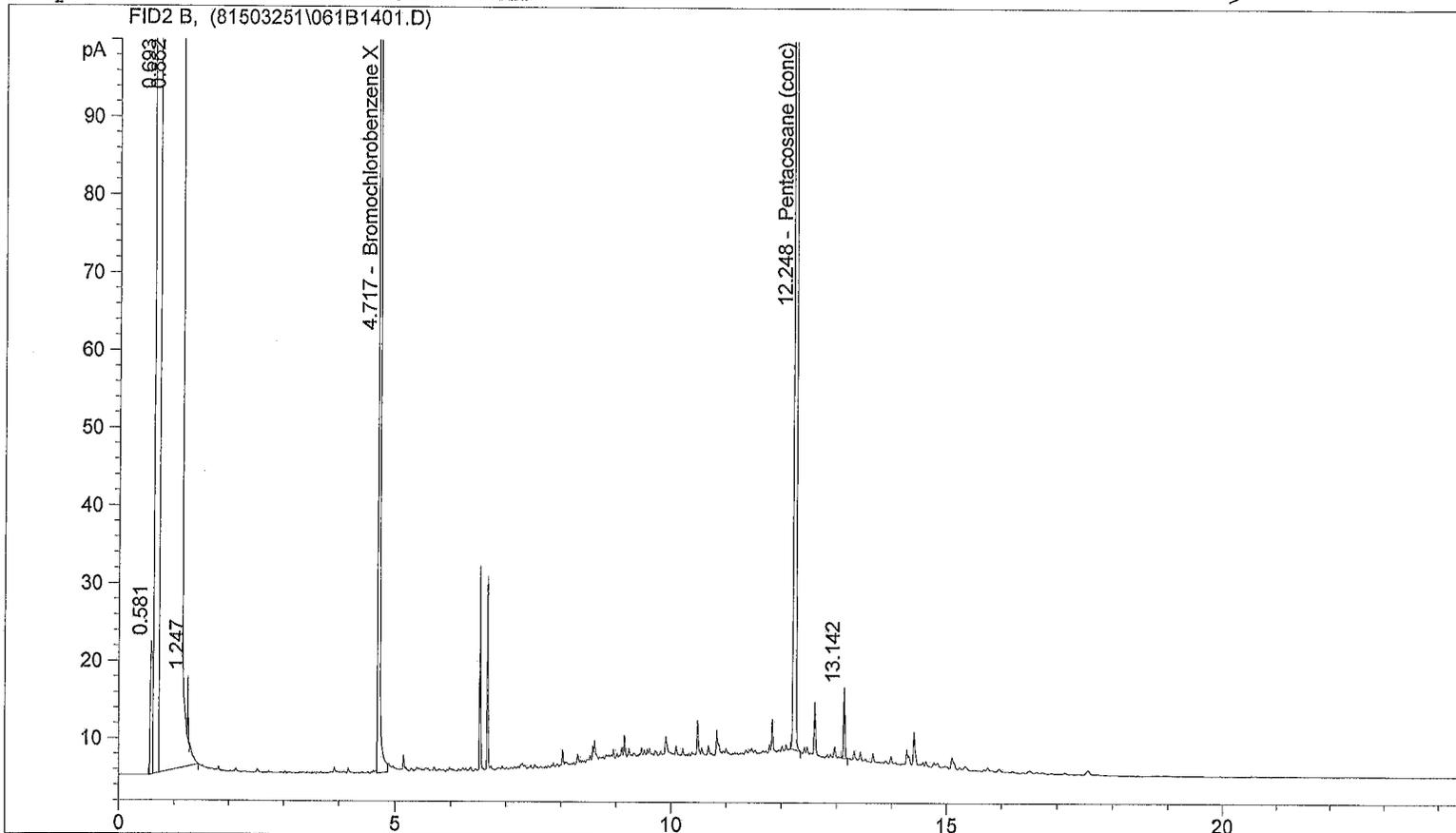
RE BY 1B / 4/6/15

03.26.15-ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\061B1401.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/25/2015 5:03:50 PM 3/25/2015 5:03:50 PM
 Report Creation: 3/25/2015 6:28:02 PM

Sample Name: EV15030127-08 1 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.717	FID2 B,	Bromochlorobenzene X	2912.810	226.791
12.248		Pentacosane (conc)	3101.402	80.496 <i>80%</i>

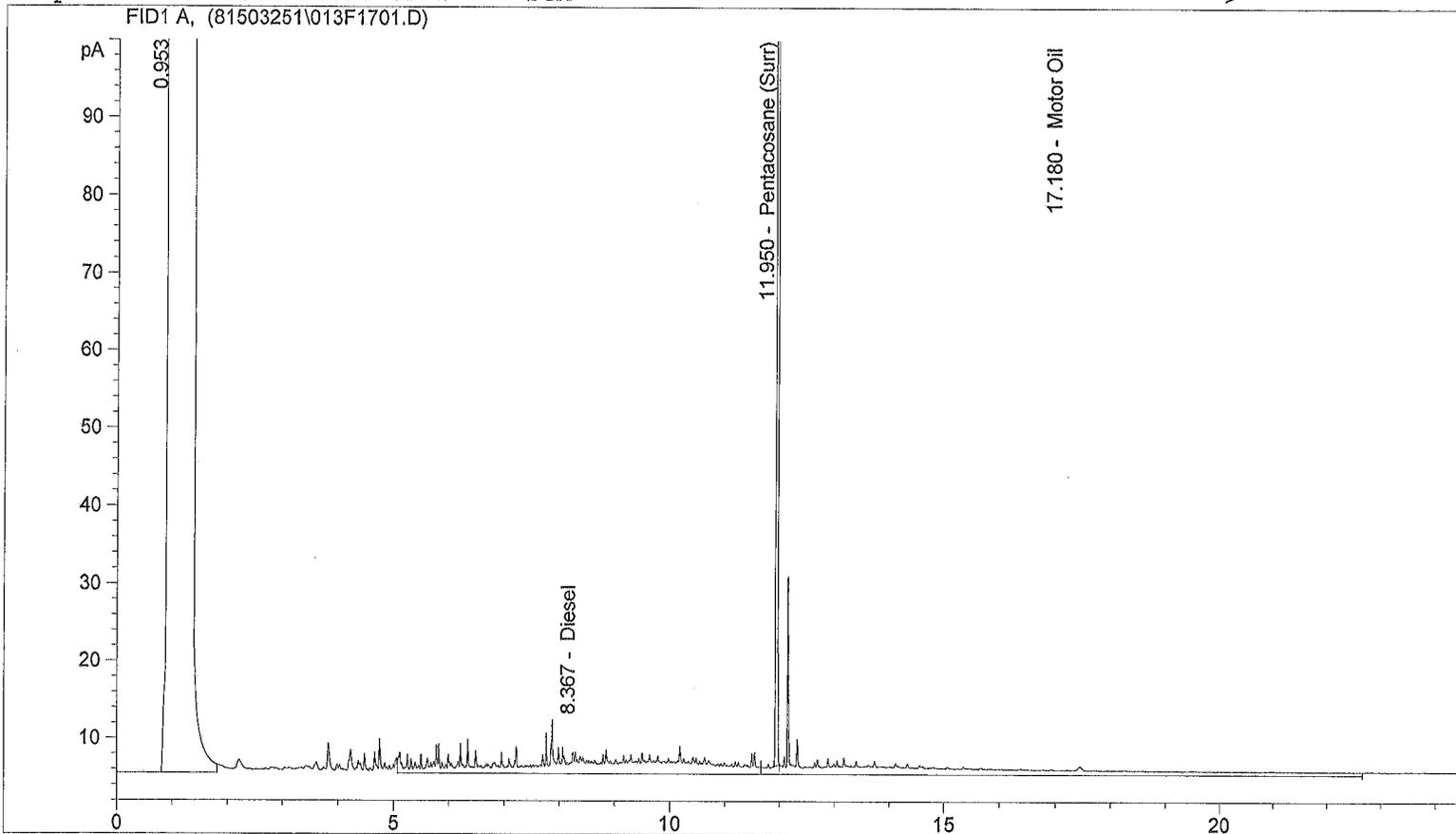
0 < 310 ug/L

RE	BY	<i>AB</i>
		<i>4/6/15</i>

03.25.15 EBS

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\013F1701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FDMO0914.M
 Injection Date & Time: 3/25/2015 6:59:15 PM 3/25/2015 6:59:15 PM
 Report Creation: 3/26/2015 9:38:40 AM

Sample Name: EV15030127-09 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.367	FID1 A,	Diesel	547.284	47.251
11.950		Pentacosane (Surr)	1097.571	45.201
17.180		Motor Oil	501.487	46.181

13%

$\Delta < 130 \text{ ng/L}$

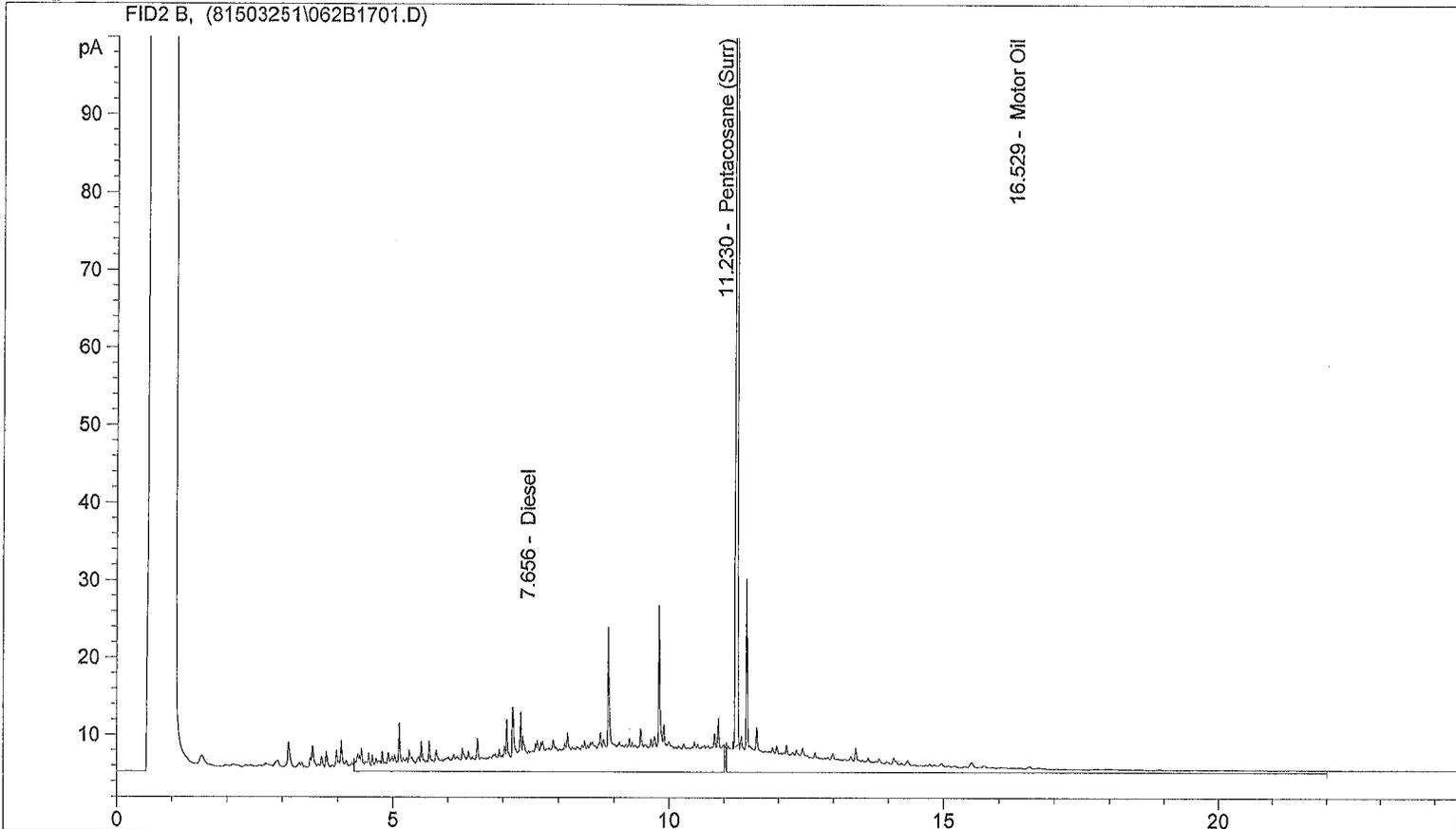
$\circ < 250 \text{ ng/L}$

RE	D BY	MS
	E	4/6/15

03-26-15

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\062B1701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BDMO0315.M
 Injection Date & Time: 3/25/2015 6:59:15 PM 3/25/2015 6:59:15 PM
 Report Creation: 3/26/2015 9:32:54 AM

Sample Name: EV15030127-09 W
 FID2 B, (81503251\062B1701.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	1148.128	89.244
11.230		Pentacosane (Surr)	1112.743	39.741
16.529		Motor Oil	686.217	54.269

99%

$D = 89.244 \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 180 \mu\text{g/L}$ Weathered Diesel or similar product

$0 < 250 \mu\text{g/L}$

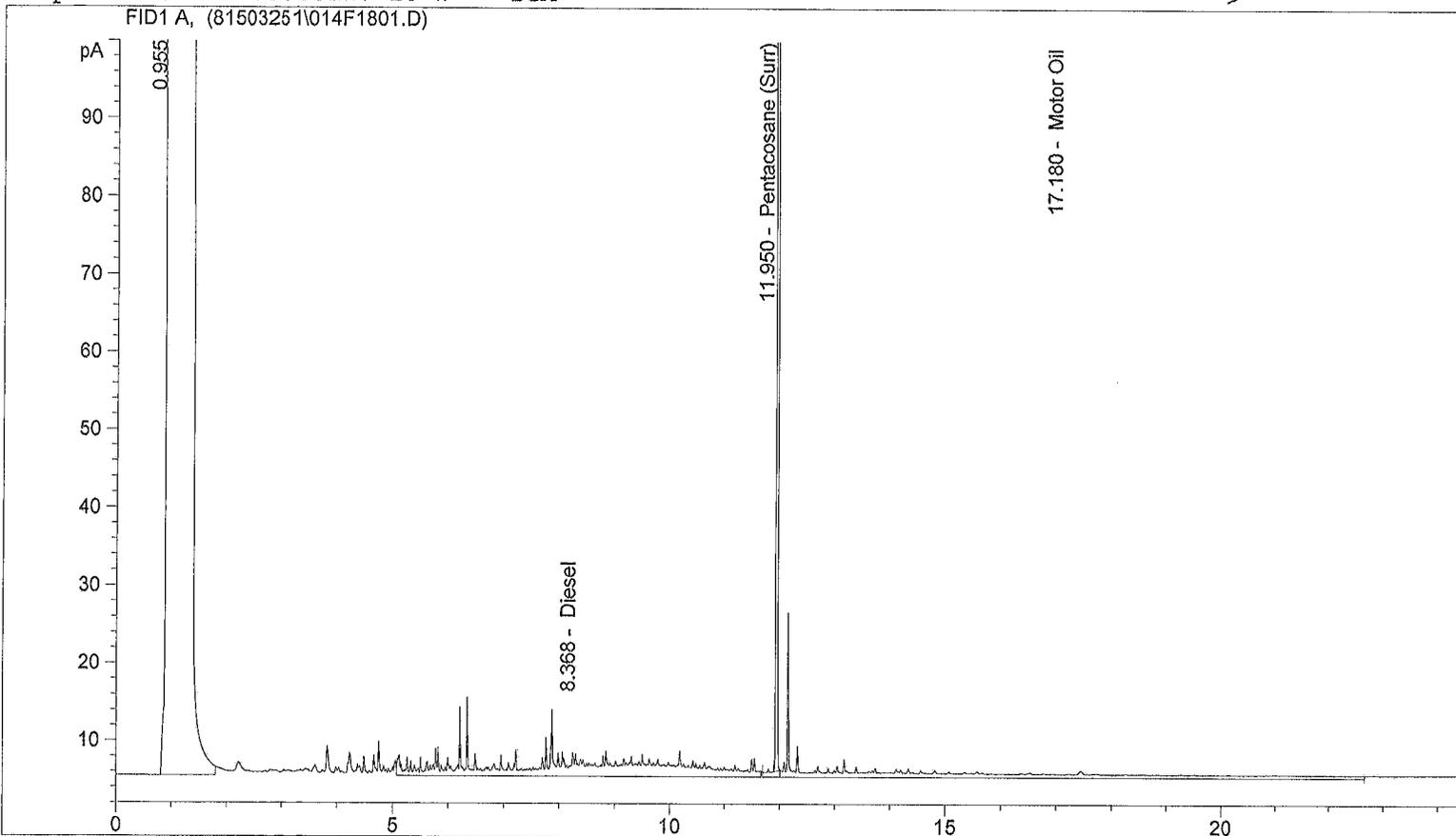
RE... BY MB
 E 4/6/15

03.26. AEI

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503251\014F1801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FDMO0914.M
 Injection Date & Time: 3/25/2015 7:29:30 PM 3/25/2015 7:29:30 PM
 Report Creation: 3/26/2015 9:38:57 AM

Sample Name: EV15030127-10 W SGA

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	525.031	45.330
11.950		Pentacosane (Surr)	1106.120	45.553
17.180		Motor Oil	359.860	33.139

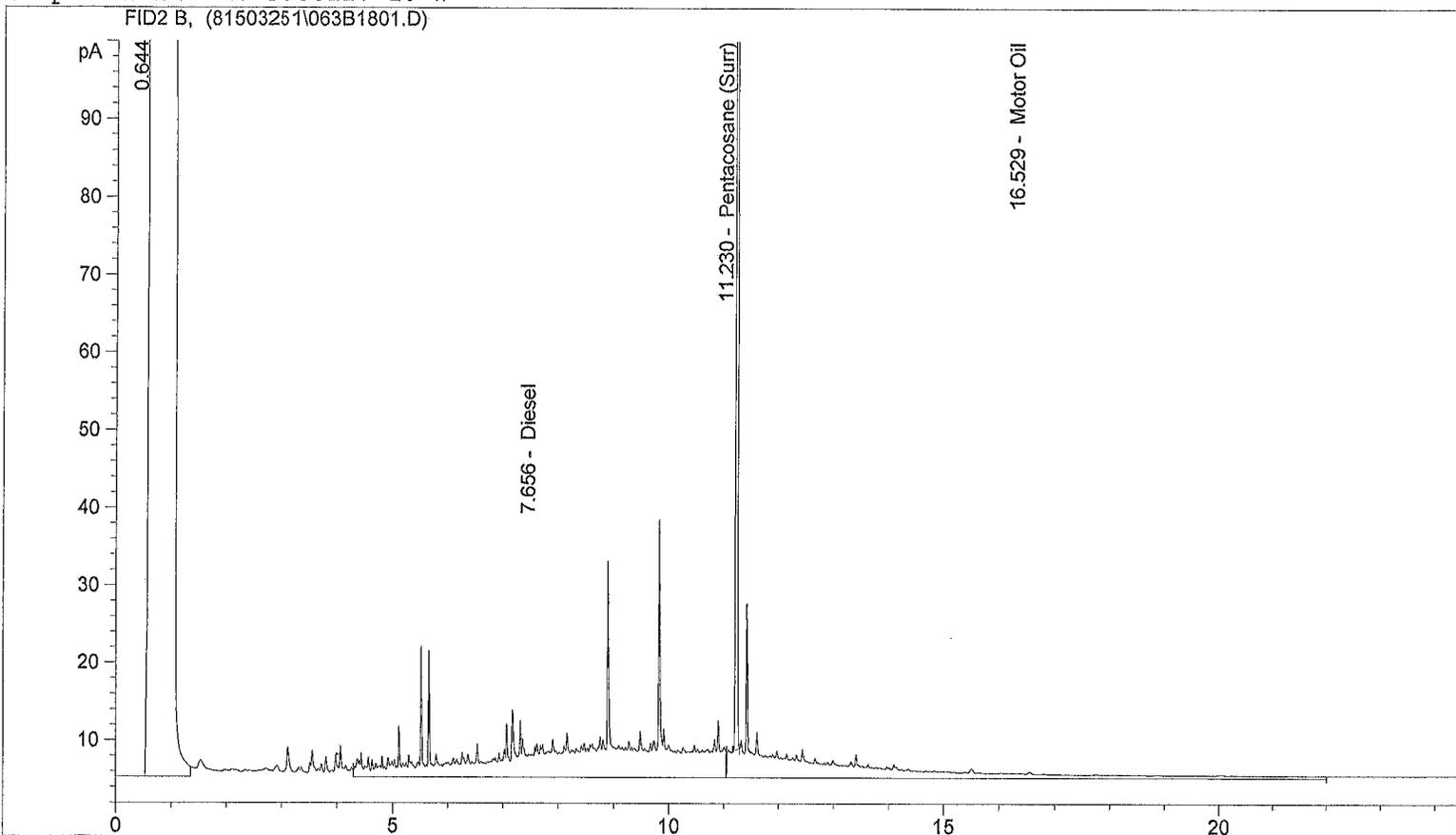
114%

$D < 130 \mu\text{g/L}$
 $O < 250 \mu\text{g/L}$

RE D BY *B*
 E 4/6/15

03.26.15

Sample Name: EV15030127-10 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	1281.307	99.597
11.230		Pentacosane (Surr)	1129.219	40.329
16.529		Motor Oil	672.793	53.208

101%

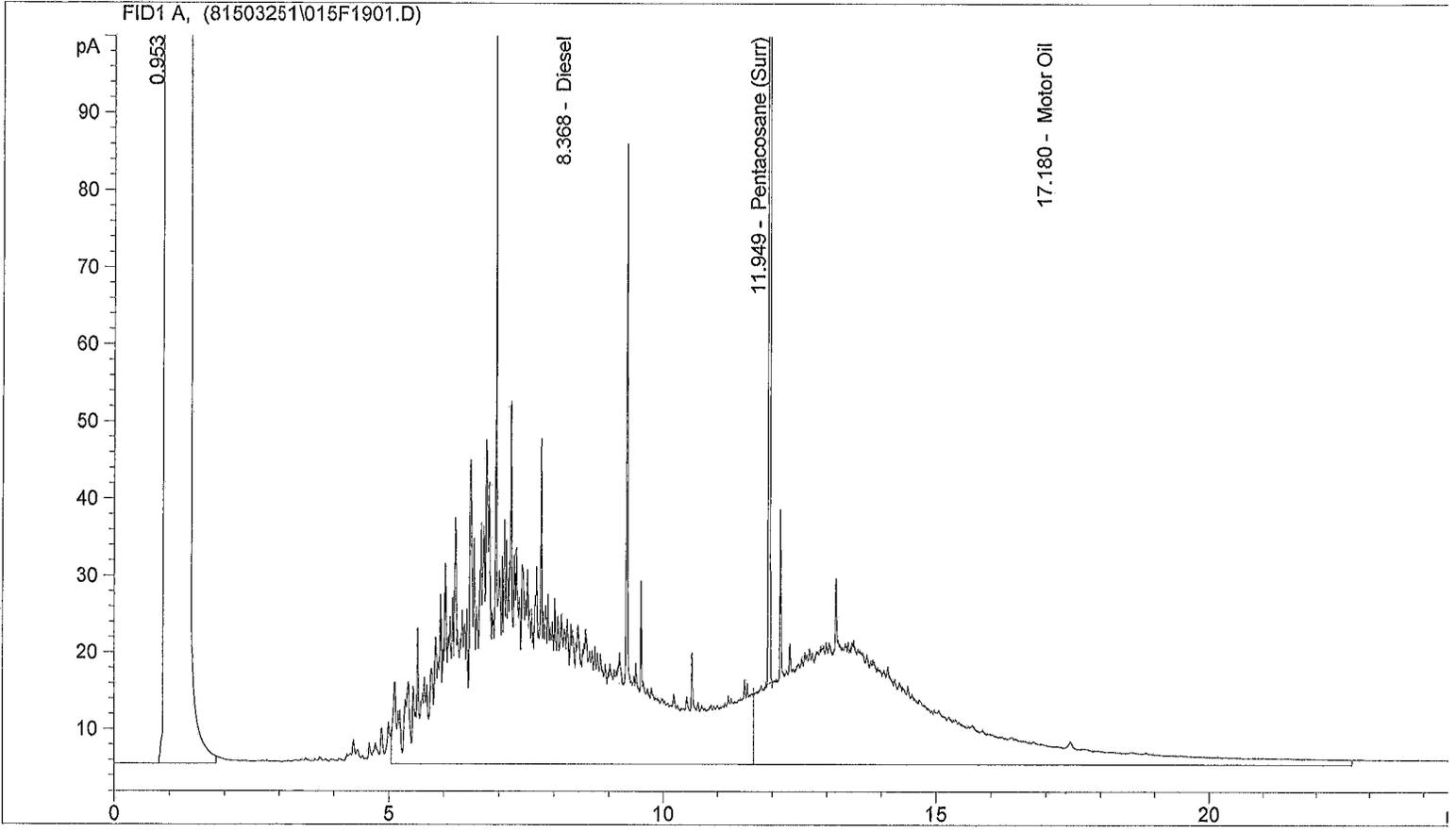
$D = 99.597 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 200 \text{ ug/L}$ Weathered Diesel Fuel or similar product

$0 < 200 \text{ ug/L}$

RE	BY	BS
	E	4/6/15

03.26.15

Sample Name: EV15030127-11 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	5515.880	476.227
11.949		Pentacosane (Surr)	1046.580	43.101
17.180		Motor Oil	3355.318	308.986

108%

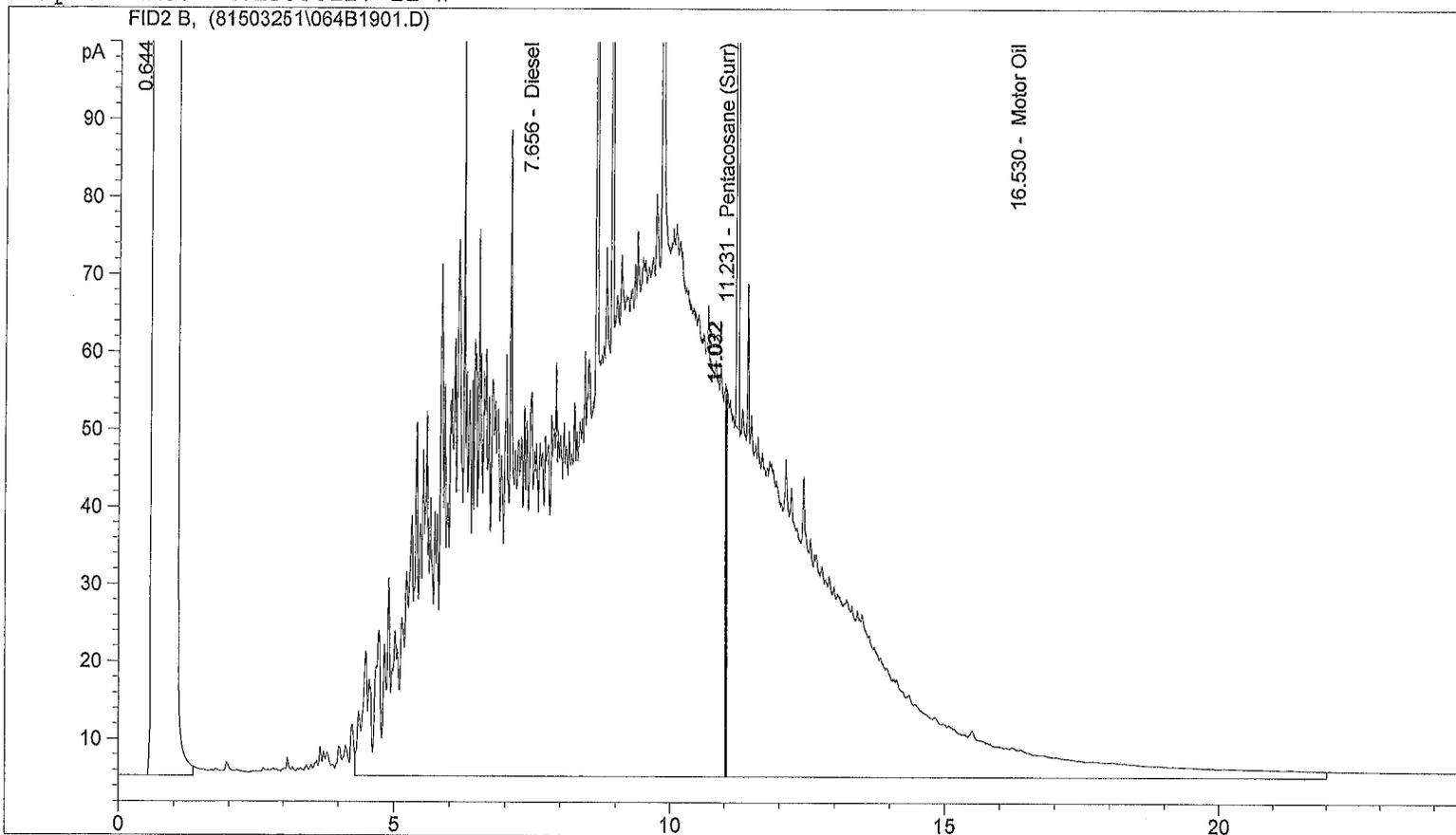
$D = 476.227 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 950 \text{ ug/L}$ Highly Weathered Diesel Fuel or similar product

$O = 308.986 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 620 \text{ ug/L}$ Lubricant Oil or similar product

RC D BY 13/6/15
 E

03.26.15 EBS

Sample Name: EV15030127-11 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	19028.238	1479.073
11.231		Pentacosane (Surr)	1053.780	37.635
16.530		Motor Oil	6916.485	546.988

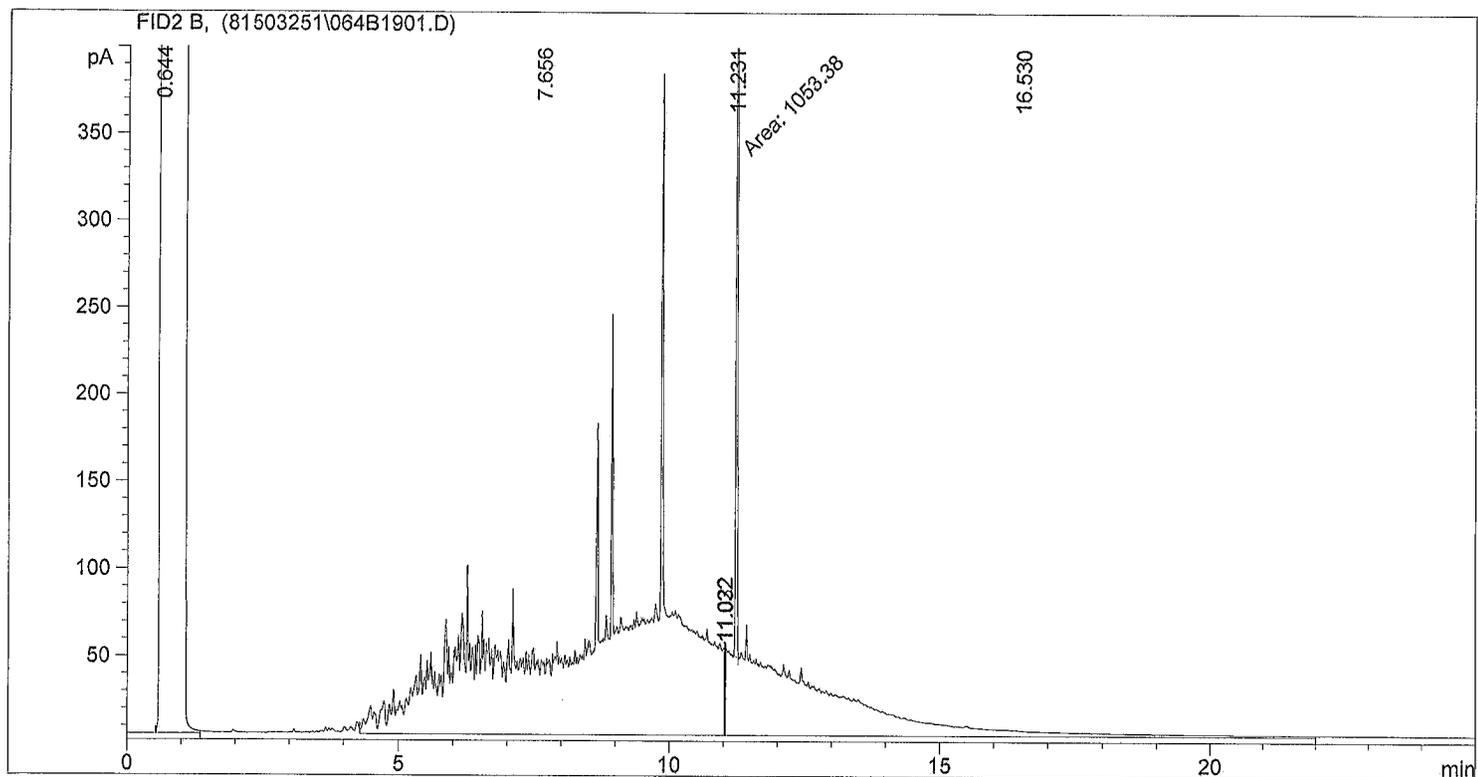
94%

$D = 1479.073 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 3000 \text{ ug/L}$ Unidentified Diesel Range Product
 (bias high due to Oil Range Product overlap)

$O = 546.988 \text{ ug/mL} \times \frac{1.8 \text{ mL}}{500 \text{ mL}} = 1100 \text{ ug/L}$ Unidentified Oil Range Product

RE BY 16
 E 4/6/15

03.26.15 EJ



*** End of Report ***



June 19, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On March 26th, 10 samples were received by our laboratory and assigned our laboratory project number EV15030143. The project was identified as your Closed City of Yakima Landfill / #1148008.030.032. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report revised to include corrected PCB results for EV15030143-08. No other abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-01
CLIENT SAMPLE ID	TP-MW-1-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	130	1	UG/L	03/26/2015	EBS
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	03/26/2015	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	250	1	UG/L	03/26/2015	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	03/26/2015	EBS
Total Dissolved Solids	SM2540C	260	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	17	0.46	5	MG/L	03/31/2015	DNT
Fluoride	EPA-300.0	0.21	0.16	1	MG/L	03/26/2015	DNT
Nitrate as N	EPA-300.0	1.2	0.034	1	MG/L	03/26/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/26/2015	DNT
Sulfate	EPA-300.0	12	0.26	1	MG/L	03/26/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	04/01/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	03/27/2015	RAL
Arsenic	EPA-200.8	0.56	0.50	1	UG/L	03/30/2015	RAL
Barium	EPA-200.8	18	1.0	1	UG/L	03/30/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium	EPA-200.8	43000	100	1	UG/L	03/30/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron	EPA-200.8	U	50	1	UG/L	03/30/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium	EPA-200.8	16000	50	1	UG/L	03/30/2015	RAL
Manganese	EPA-200.8	15	2.0	1	UG/L	03/30/2015	RAL
Potassium	EPA-200.8	4300	50	1	UG/L	03/30/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium	EPA-200.8	23000	50	1	UG/L	03/30/2015	RAL
Arsenic (Dissolved)	EPA-200.8	0.97	0.50	1	UG/L	03/30/2015	RAL
Barium (Dissolved)	EPA-200.8	18	1.0	1	UG/L	03/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	42000	100	1	UG/L	03/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	UG/L	03/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	16000	50	1	UG/L	03/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	9.3	2.0	1	UG/L	03/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	4200	50	1	UG/L	03/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-01
CLIENT SAMPLE ID	TP-MW-1-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Sodium (Dissolved)	EPA-200.8	23000	50	1	UG/L	03/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	180	0.0	1	MG/L	04/01/2015	CAS
Bicarbonate as CaCO3	SM2320B	180	0.0	1	MG/L	04/01/2015	CAS
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	2.2	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	111	03/26/2015	EBS
C25	NWTPH-DX	96.2	03/26/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-02
CLIENT SAMPLE ID	TP-MW-2-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 10:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	1600	130	1	UG/L	03/26/2015	EBS
TPH-Diesel Range	NWTPH-DX	6200	130	1	UG/L	03/26/2015	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	570	250	1	UG/L	03/26/2015	EBS
TPH-Oil Range	NWTPH-DX	1700	250	1	UG/L	03/26/2015	EBS
Total Dissolved Solids	SM2540C	1300	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	14	0.092	1	MG/L	03/26/2015	DNT
Fluoride	EPA-300.0	2.4	0.16	1	MG/L	03/26/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/26/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/26/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	04/07/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	04/01/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	03/27/2015	RAL
Arsenic	EPA-200.8	12	0.50	1	UG/L	03/30/2015	RAL
Barium	EPA-200.8	130	1.0	1	UG/L	03/30/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium	EPA-200.8	75000	100	1	UG/L	03/30/2015	RAL
Chromium	EPA-200.8	15	2.0	1	UG/L	03/30/2015	RAL
Iron	EPA-200.8	34000	50	1	UG/L	03/30/2015	RAL
Lead	EPA-200.8	2.1	0.28	1	UG/L	03/30/2015	RAL
Magnesium	EPA-200.8	19000	50	1	UG/L	03/30/2015	RAL
Manganese	EPA-200.8	1200	2.0	1	UG/L	03/30/2015	RAL
Potassium	EPA-200.8	12000	50	1	UG/L	03/30/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium	EPA-200.8	140000	250	5	UG/L	04/02/2015	RAL
Arsenic (Dissolved)	EPA-200.8	12	0.50	1	UG/L	03/30/2015	RAL
Barium (Dissolved)	EPA-200.8	120	1.0	1	UG/L	03/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	68000	100	1	UG/L	03/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	15	2.0	1	UG/L	03/30/2015	RAL
Iron (Dissolved)	EPA-200.8	31000	50	1	UG/L	03/30/2015	RAL
Lead (Dissolved)	EPA-200.8	1.7	0.28	1	UG/L	03/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	18000	50	1	UG/L	03/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	1100	2.0	1	UG/L	03/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	11000	50	1	UG/L	03/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-02
CLIENT SAMPLE ID	TP-MW-2-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 10:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Sodium (Dissolved)	EPA-200.8	130000	250	5	UG/L	04/02/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	470	0.0	1	MG/L	04/01/2015	CAS
Bicarbonate as CaCO3	SM2320B	470	0.0	1	MG/L	04/01/2015	CAS
Ammonia as N	EPA-350.1	12	0.25	5	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	430	250	500	MG/L	03/30/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	85.1	03/26/2015	EBS
C25	NWTPH-DX	96.5	03/26/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-03
CLIENT SAMPLE ID	MW-12-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	310	130	1	UG/L	03/26/2015	EBS
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	03/26/2015	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	650	250	1	UG/L	03/26/2015	EBS
TPH-Oil Range	NWTPH-DX	3100	250	1	UG/L	03/26/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	04/01/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	04/01/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	04/01/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	04/01/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Acetone	EPA-8260	U	25	1	UG/L	04/01/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	04/01/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	04/01/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Butanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Benzene	EPA-8260	U	0.028	1	UG/L	04/01/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-03
CLIENT SAMPLE ID	MW-12-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	04/01/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Hexanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	04/01/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	04/01/2015	DLC
Styrene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	04/01/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	04/01/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Naphthalene	EPA-8270 SIM	U	0.015	1	UG/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.015	1	UG/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-03
CLIENT SAMPLE ID	MW-12-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluorene	EPA-8270 SIM	U	0.01	1	UG/L	03/31/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	UG/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.015	1	UG/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.01	1	UG/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.012	1	UG/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.018	1	UG/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0074	1	UG/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.030	1	UG/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.015	1	UG/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	UG/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.1	1	UG/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	UG/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.1	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.96	1	UG/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.1	1	UG/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	2.1	1	UG/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.1	1	UG/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-03
CLIENT SAMPLE ID	MW-12-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,6-Trichlorophenol	EPA-8270	U	0.92	1	UG/L	03/30/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.1	1	UG/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.80	1	UG/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.1	1	UG/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.1	1	UG/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.7	1	UG/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.1	1	UG/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.83	1	UG/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0053	1	UG/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.011	1	UG/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.0053	1	UG/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.0053	1	UG/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0073	1	UG/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0053	1	UG/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0053	1	UG/L	04/06/2015	CAS
A-BHC	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-03
CLIENT SAMPLE ID	MW-12-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Aldrin	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endosulfan II	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.017	1	UG/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.53	1	UG/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	520	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	18	0.092	1	MG/L	03/26/2015	DNT
Fluoride	EPA-300.0	0.48	0.16	1	MG/L	03/26/2015	DNT
Nitrate as N	EPA-300.0	0.23	0.034	1	MG/L	03/26/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/26/2015	DNT
Sulfate	EPA-300.0	45	2.6	10	MG/L	03/31/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	04/01/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	03/27/2015	RAL
Arsenic	EPA-200.8	1.1	0.50	1	UG/L	03/30/2015	RAL
Barium	EPA-200.8	69	1.0	1	UG/L	03/30/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium	EPA-200.8	65000	100	1	UG/L	03/30/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron	EPA-200.8	1600	50	1	UG/L	03/30/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium	EPA-200.8	23000	50	1	UG/L	03/30/2015	RAL
Manganese	EPA-200.8	2300	2.0	1	UG/L	03/30/2015	RAL
Potassium	EPA-200.8	7000	50	1	UG/L	03/30/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium	EPA-200.8	79000	50	1	UG/L	03/30/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.3	0.50	1	UG/L	03/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-03
CLIENT SAMPLE ID	MW-12-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Barium (Dissolved)	EPA-200.8	69	1.0	1	UG/L	03/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	65000	100	1	UG/L	03/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron (Dissolved)	EPA-200.8	3100	50	1	UG/L	03/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	23000	50	1	UG/L	03/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	2500	2.0	1	UG/L	03/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	6900	50	1	UG/L	03/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	77000	50	1	UG/L	03/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	380	0.0	1	MG/L	04/01/2015	CAS
Bicarbonate as CaCO3	SM2320B	380	0.0	1	MG/L	04/01/2015	CAS
Ammonia as N	EPA-350.1	1.0	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	13	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	111	03/26/2015	EBS
C25	NWTPH-DX	121	03/26/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	99.9	04/01/2015	DLC
Toluene-d8	EPA-8260	101	04/01/2015	DLC
4-Bromofluorobenzene	EPA-8260	102	04/01/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	78.1	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	96.4	03/31/2015	GAP
2-Fluorophenol	EPA-8270	53.2	03/30/2015	GAP
Phenol-d5	EPA-8270	34.9	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	89.9	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	73.8	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	121	03/30/2015	GAP
Terphenyl-d14	EPA-8270	98.8	03/30/2015	GAP
DCB	EPA-8082	68.0	04/06/2015	CAS
TCMX	EPA-8081	58.0	04/03/2015	CAS
DCB	EPA-8081	65.0	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-03
		DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:40:00 AM
CLIENT SAMPLE ID	MW-12-032515	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and lube oil.
Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-04
CLIENT SAMPLE ID	MW-101-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	350	130	1	UG/L	03/26/2015	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	U	130	1	UG/L	03/26/2015	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	03/26/2015	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	250	1	UG/L	03/26/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	04/01/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	04/01/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	04/01/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	04/01/2015	DLC
1,1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Acetone	EPA-8260	U	25	1	UG/L	04/01/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	04/01/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	04/01/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Butanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Benzene	EPA-8260	U	0.028	1	UG/L	04/01/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-04
CLIENT SAMPLE ID	MW-101-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	04/01/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Hexanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	04/01/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	04/01/2015	DLC
Styrene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	04/01/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	04/01/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Naphthalene	EPA-8270 SIM	0.13	0.013	1	UG/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-04
CLIENT SAMPLE ID	MW-101-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluorene	EPA-8270 SIM	U	0.0090	1	UG/L	03/31/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	UG/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	UG/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-04
CLIENT SAMPLE ID	MW-101-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	UG/L	03/30/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	UG/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0051	1	UG/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.014	1	UG/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.0056	1	UG/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.0051	1	UG/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0051	1	UG/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0051	1	UG/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0051	1	UG/L	04/06/2015	CAS
A-BHC	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-04
CLIENT SAMPLE ID	MW-101-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Aldrin	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endosulfan II	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.51	1	UG/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	260	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	11	0.092	1	MG/L	03/31/2015	DNT
Fluoride	EPA-300.0	0.17	0.16	1	MG/L	03/26/2015	DNT
Nitrate as N	EPA-300.0	0.045	0.034	1	MG/L	03/26/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/26/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/31/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	04/01/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	03/27/2015	RAL
Arsenic	EPA-200.8	2.7	0.50	1	UG/L	03/30/2015	RAL
Barium	EPA-200.8	37	1.0	1	UG/L	03/30/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium	EPA-200.8	39000	100	1	UG/L	03/30/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron	EPA-200.8	21000	50	1	UG/L	03/30/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium	EPA-200.8	14000	50	1	UG/L	03/30/2015	RAL
Manganese	EPA-200.8	1700	2.0	1	UG/L	03/30/2015	RAL
Potassium	EPA-200.8	6100	50	1	UG/L	03/30/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium	EPA-200.8	20000	50	1	UG/L	03/30/2015	RAL
Arsenic (Dissolved)	EPA-200.8	4.2	0.50	1	UG/L	03/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-04
CLIENT SAMPLE ID	MW-101-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 11:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Barium (Dissolved)	EPA-200.8	36	1.0	1	UG/L	03/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	38000	100	1	UG/L	03/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron (Dissolved)	EPA-200.8	21000	50	1	UG/L	03/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	UG/L	03/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	1600	2.0	1	UG/L	03/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	5900	50	1	UG/L	03/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	20000	50	1	UG/L	03/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	190	0.0	1	MG/L	04/01/2015	CAS
Bicarbonate as CaCO3	SM2320B	190	0.0	1	MG/L	04/01/2015	CAS
Ammonia as N	EPA-350.1	1.0	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	6.4	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	115	03/26/2015	EBS
C25	NWTPH-DX w/ SGA	122	03/26/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	101	04/01/2015	DLC
Toluene-d8	EPA-8260	100	04/01/2015	DLC
4-Bromofluorobenzene	EPA-8260	102	04/01/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	76.7	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	100	03/31/2015	GAP
2-Fluorophenol	EPA-8270	51.0	03/30/2015	GAP
Phenol-d5	EPA-8270	33.0	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	94.3	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	80.5	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	123 GS1	03/30/2015	GAP
Terphenyl-d14	EPA-8270	107	03/30/2015	GAP
DCB	EPA-8082	84.0	04/06/2015	CAS
TCMX	EPA-8081	71.0	04/03/2015	CAS
DCB	EPA-8081	82.0	04/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
 GS1 - Surrogate outside of control limits due to matrix effect.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-05
CLIENT SAMPLE ID	MW-108-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 1:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	UG/L	03/26/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	UG/L	03/26/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	UG/L	03/26/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	04/01/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	04/01/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	04/01/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	04/01/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Acetone	EPA-8260	U	25	1	UG/L	04/01/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	04/01/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	04/01/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Butanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Benzene	EPA-8260	U	0.028	1	UG/L	04/01/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	04/01/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-05
CLIENT SAMPLE ID	MW-108-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 1:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Hexanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	04/01/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	04/01/2015	DLC
Styrene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	04/01/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	04/01/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Naphthalene	EPA-8270 SIM	0.016	0.013	1	UG/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	0.016	0.0090	1	UG/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-05
CLIENT SAMPLE ID	MW-108-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 1:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	0.011	0.01	1	UG/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	UG/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	UG/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	UG/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

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CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-05
CLIENT SAMPLE ID	MW-108-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 1:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	UG/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1242	EPA-8082	0.0099	0.0050	1	UG/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
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CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-05
CLIENT SAMPLE ID	MW-108-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 1:15:00 PM
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	260	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	17	0.092	1	MG/L	03/26/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/26/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/26/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/26/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/26/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	04/01/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	03/27/2015	RAL
Arsenic	EPA-200.8	6.6	0.50	1	UG/L	03/30/2015	RAL
Barium	EPA-200.8	61	1.0	1	UG/L	03/30/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium	EPA-200.8	44000	100	1	UG/L	03/30/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron	EPA-200.8	35000	50	1	UG/L	03/30/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium	EPA-200.8	16000	50	1	UG/L	03/30/2015	RAL
Manganese	EPA-200.8	2400	2.0	1	UG/L	03/30/2015	RAL
Potassium	EPA-200.8	7800	50	1	UG/L	03/30/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium	EPA-200.8	18000	50	1	UG/L	03/30/2015	RAL
Arsenic (Dissolved)	EPA-200.8	6.6	0.50	1	UG/L	03/30/2015	RAL
Barium (Dissolved)	EPA-200.8	60	1.0	1	UG/L	03/30/2015	RAL



CERTIFICATE OF ANALYSIS

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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	43000	100	1	UG/L	03/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron (Dissolved)	EPA-200.8	35000	50	1	UG/L	03/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	15000	50	1	UG/L	03/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	2400	2.0	1	UG/L	03/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	7700	50	1	UG/L	03/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	18000	50	1	UG/L	03/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	220	0.0	1	MG/L	04/01/2015	CAS
Bicarbonate as CaCO3	SM2320B	220	0.0	1	MG/L	04/01/2015	CAS
Ammonia as N	EPA-350.1	2.7	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.8	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	89.2	03/26/2015	EBS
C25	NWTPH-HCID	75.1	03/26/2015	EBS
C25 (conc)	NWTPH-HCID	71.6	03/26/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	99.9	04/01/2015	DLC
Toluene-d8	EPA-8260	99.6	04/01/2015	DLC
4-Bromofluorobenzene	EPA-8260	101	04/01/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	76.2	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	107	03/31/2015	GAP
2-Fluorophenol	EPA-8270	48.1	03/30/2015	GAP
Phenol-d5	EPA-8270	30.7	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	89.8	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	76.8	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	117	03/30/2015	GAP
Terphenyl-d14	EPA-8270	103	03/30/2015	GAP
DCB	EPA-8082	82.0	04/06/2015	CAS
TCMX	EPA-8081	66.0	04/03/2015	CAS
DCB	EPA-8081	79.0	04/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-06
CLIENT SAMPLE ID	MW-8-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	UG/L	03/26/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	UG/L	03/26/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	UG/L	03/26/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	04/01/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	04/01/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	04/01/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	04/01/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Acetone	EPA-8260	U	25	1	UG/L	04/01/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	04/01/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	04/01/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Butanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Benzene	EPA-8260	U	0.028	1	UG/L	04/01/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	04/01/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-06
		DATE RECEIVED:	03/26/2015
CLIENT SAMPLE ID	MW-8-032515	COLLECTION DATE:	3/25/2015 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Hexanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	04/01/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	04/01/2015	DLC
Styrene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	04/01/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	04/01/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	0.0096	0.0090	1	UG/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

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CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-06
CLIENT SAMPLE ID	MW-8-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	UG/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	UG/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	UG/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-06
CLIENT SAMPLE ID	MW-8-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	UG/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0052	1	UG/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.023	1	UG/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.026	1	UG/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.011	1	UG/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0064	1	UG/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0052	1	UG/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0052	1	UG/L	04/06/2015	CAS
A-BHC	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Aldrin	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-06
		DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 2:35:00 PM
CLIENT SAMPLE ID	MW-8-032515	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endosulfan II	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	UG/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.52	1	UG/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	290	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	24	0.92	10	MG/L	03/26/2015	DNT
Fluoride	EPA-300.0	0.19	0.16	1	MG/L	03/26/2015	DNT
Nitrate as N	EPA-300.0	27	0.34	10	MG/L	03/26/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/26/2015	DNT
Sulfate	EPA-300.0	1.2	0.26	1	MG/L	03/26/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	04/01/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	03/27/2015	RAL
Arsenic	EPA-200.8	1.6	0.50	1	UG/L	03/30/2015	RAL
Barium	EPA-200.8	63	1.0	1	UG/L	03/30/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium	EPA-200.8	42000	100	1	UG/L	03/30/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron	EPA-200.8	5200	50	1	UG/L	03/30/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium	EPA-200.8	19000	50	1	UG/L	03/30/2015	RAL
Manganese	EPA-200.8	2200	2.0	1	UG/L	03/30/2015	RAL
Potassium	EPA-200.8	20000	50	1	UG/L	03/30/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium	EPA-200.8	30000	50	1	UG/L	03/30/2015	RAL
Arsenic (Dissolved)	EPA-200.8	1.5	0.50	1	UG/L	03/30/2015	RAL
Barium (Dissolved)	EPA-200.8	65	1.0	1	UG/L	03/30/2015	RAL



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-06
CLIENT SAMPLE ID	MW-8-032515	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	43000	100	1	UG/L	03/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron (Dissolved)	EPA-200.8	5900	50	1	UG/L	03/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	19000	50	1	UG/L	03/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	2200	2.0	1	UG/L	03/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	20000	50	1	UG/L	03/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	30000	50	1	UG/L	03/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	260	0.0	1	MG/L	04/01/2015	CAS
Bicarbonate as CaCO3	SM2320B	260	0.0	1	MG/L	04/01/2015	CAS
Ammonia as N	EPA-350.1	11	0.25	5	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	3.8	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	87.5	03/26/2015	EBS
C25	NWTPH-HCID	74.4	03/26/2015	EBS
C25 (conc)	NWTPH-HCID	67.1	03/26/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	100	04/01/2015	DLC
Toluene-d8	EPA-8260	99.8	04/01/2015	DLC
4-Bromofluorobenzene	EPA-8260	102	04/01/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	78.7	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	107	03/31/2015	GAP
2-Fluorophenol	EPA-8270	52.2	03/30/2015	GAP
Phenol-d5	EPA-8270	32.5	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	91.6	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	80.8	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	122	03/30/2015	GAP
Terphenyl-d14	EPA-8270	107	03/30/2015	GAP
DCB	EPA-8082	83.0	04/06/2015	CAS
TCMX	EPA-8081	67.0	04/03/2015	CAS
DCB	EPA-8081	78.0	04/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-07
CLIENT SAMPLE ID	Trip Blanks	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/25/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	04/01/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	04/01/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	04/01/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	04/01/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Acetone	EPA-8260	U	25	1	UG/L	04/01/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	04/01/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	04/01/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Butanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Benzene	EPA-8260	U	0.028	1	UG/L	04/01/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	04/01/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-07
		DATE RECEIVED:	03/26/2015
CLIENT SAMPLE ID	Trip Blanks	COLLECTION DATE:	3/25/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	04/01/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	04/01/2015	DLC
Styrene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	04/01/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	04/01/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	97.8	04/01/2015	DLC
Toluene-d8	EPA-8260	100	04/01/2015	DLC
4-Bromofluorobenzene	EPA-8260	101	04/01/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-08
CLIENT SAMPLE ID	MW-105-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 4:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	UG/L	03/26/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	UG/L	03/26/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	UG/L	03/26/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	04/01/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	04/01/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	04/01/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	04/01/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Acetone	EPA-8260	U	25	1	UG/L	04/01/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	04/01/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	04/01/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Butanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Benzene	EPA-8260	U	0.028	1	UG/L	04/01/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	04/01/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-08
CLIENT SAMPLE ID	MW-105-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 4:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Hexanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	04/01/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	04/01/2015	DLC
Styrene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	04/01/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	04/01/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	0.12	0.014	1	UG/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	UG/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-08
CLIENT SAMPLE ID	MW-105-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 4:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	0.012	0.01	1	UG/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	0.020	0.0092	1	UG/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	0.017	0.01	1	UG/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	UG/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	UG/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-08
CLIENT SAMPLE ID	MW-105-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 4:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	UG/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	04/27/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	04/27/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	04/27/2015	CAS
PCB-1242	EPA-8082	0.014	0.0050	1	UG/L	04/27/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	04/27/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	04/16/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	04/16/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-08
		DATE RECEIVED:	03/26/2015
CLIENT SAMPLE ID	MW-105-032415	COLLECTION DATE:	3/24/2015 4:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	230	5.0	1	MG/L	03/31/2015	DLC
Chloride	EPA-300.0	19	0.092	1	MG/L	03/26/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/26/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/26/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/26/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/26/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	04/01/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	03/27/2015	RAL
Arsenic	EPA-200.8	4.8	0.50	1	UG/L	03/30/2015	RAL
Barium	EPA-200.8	67	1.0	1	UG/L	03/30/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium	EPA-200.8	41000	100	1	UG/L	03/30/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron	EPA-200.8	32000	50	1	UG/L	03/30/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium	EPA-200.8	13000	50	1	UG/L	03/30/2015	RAL
Manganese	EPA-200.8	3000	2.0	1	UG/L	03/30/2015	RAL
Potassium	EPA-200.8	7800	50	1	UG/L	03/30/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium	EPA-200.8	17000	50	1	UG/L	03/30/2015	RAL
Arsenic (Dissolved)	EPA-200.8	4.6	0.50	1	UG/L	03/30/2015	RAL
Barium (Dissolved)	EPA-200.8	66	1.0	1	UG/L	03/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-08
CLIENT SAMPLE ID	MW-105-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 4:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	40000	100	1	UG/L	03/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron (Dissolved)	EPA-200.8	32000	50	1	UG/L	03/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	UG/L	03/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	3000	2.0	1	UG/L	03/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	7700	50	1	UG/L	03/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	17000	50	1	UG/L	03/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	180	0.0	1	MG/L	04/01/2015	CAS
Bicarbonate as CaCO3	SM2320B	180	0.0	1	MG/L	04/01/2015	CAS
Ammonia as N	EPA-350.1	1.0	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	5.2	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	96.3	03/26/2015	EBS
C25	NWTPH-HCID	78.9	03/26/2015	EBS
C25 (conc)	NWTPH-HCID	74.9	03/26/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	98.9	04/01/2015	DLC
Toluene-d8	EPA-8260	101	04/01/2015	DLC
4-Bromofluorobenzene	EPA-8260	100	04/01/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	78.6	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	112	03/31/2015	GAP
2-Fluorophenol	EPA-8270	52.6	03/30/2015	GAP
Phenol-d5	EPA-8270	32.6	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	91.4	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	80.5	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	119	03/30/2015	GAP
Terphenyl-d14	EPA-8270	110	03/30/2015	GAP
DCB	EPA-8082	84.0	04/27/2015	CAS
TCMX	EPA-8081	74.0	04/03/2015	CAS
DCB	EPA-8081	88.0	04/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-09
CLIENT SAMPLE ID	MW-103-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 6:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	UG/L	03/26/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	UG/L	03/26/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	UG/L	03/26/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	04/01/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	04/01/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	04/01/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	04/01/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Acetone	EPA-8260	U	25	1	UG/L	04/01/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	04/01/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	04/01/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Butanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Benzene	EPA-8260	U	0.028	1	UG/L	04/01/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	04/01/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-09
CLIENT SAMPLE ID	MW-103-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 6:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Hexanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	04/01/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	04/01/2015	DLC
Styrene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	04/01/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	04/01/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Naphthalene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	UG/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-09
CLIENT SAMPLE ID	MW-103-032415	DATE RECEIVED:	03/26/2015
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		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	UG/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	UG/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	UG/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-09
CLIENT SAMPLE ID	MW-103-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 6:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	UG/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0094	1	UG/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.012	1	UG/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.0089	1	UG/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0054	1	UG/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-09
CLIENT SAMPLE ID	MW-103-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 6:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	0.065	0.010	1	UG/L	04/03/2015	CAS
Endosulfan II	EPA-8081	0.068	0.010	1	UG/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	240	5.0	1	MG/L	03/31/2015	DLC
Chloride	EPA-300.0	19	0.092	1	MG/L	03/26/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/26/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/26/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/26/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/26/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	04/01/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	03/27/2015	RAL
Arsenic	EPA-200.8	6.0	0.50	1	UG/L	03/30/2015	RAL
Barium	EPA-200.8	61	1.0	1	UG/L	03/30/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium	EPA-200.8	45000	100	1	UG/L	03/30/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron	EPA-200.8	28000	50	1	UG/L	03/30/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium	EPA-200.8	16000	50	1	UG/L	03/30/2015	RAL
Manganese	EPA-200.8	2900	2.0	1	UG/L	03/30/2015	RAL
Potassium	EPA-200.8	5900	50	1	UG/L	03/30/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium	EPA-200.8	23000	50	1	UG/L	03/30/2015	RAL
Arsenic (Dissolved)	EPA-200.8	7.3	0.50	1	UG/L	03/30/2015	RAL
Barium (Dissolved)	EPA-200.8	59	1.0	1	UG/L	03/30/2015	RAL



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-09
CLIENT SAMPLE ID	MW-103-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 6:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	45000	100	1	UG/L	03/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron (Dissolved)	EPA-200.8	28000	50	1	UG/L	03/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	16000	50	1	UG/L	03/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	2900	2.0	1	UG/L	03/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	5900	50	1	UG/L	03/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	23000	50	1	UG/L	03/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	220	0.0	1	MG/L	04/01/2015	CAS
Bicarbonate as CaCO3	SM2320B	220	0.0	1	MG/L	04/01/2015	CAS
Ammonia as N	EPA-350.1	2.0	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.1	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	89.3	03/26/2015	EBS
C25	NWTPH-HCID	71.0	03/26/2015	EBS
C25 (conc)	NWTPH-HCID	68.9	03/26/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	97.7	04/01/2015	DLC
Toluene-d8	EPA-8260	100	04/01/2015	DLC
4-Bromofluorobenzene	EPA-8260	100	04/01/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	76.9	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	104	03/31/2015	GAP
2-Fluorophenol	EPA-8270	49.5	03/30/2015	GAP
Phenol-d5	EPA-8270	30.7	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	89.2	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	79.5	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	118	03/30/2015	GAP
Terphenyl-d14	EPA-8270	105	03/30/2015	GAP
DCB	EPA-8082	86.0	04/06/2015	CAS
TCMX	EPA-8081	67.0	04/03/2015	CAS
DCB	EPA-8081	84.0	04/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-10
CLIENT SAMPLE ID	MW-104-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 6:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	UG/L	03/26/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	UG/L	03/26/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	UG/L	03/26/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	04/01/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	04/01/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	04/01/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	04/01/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	04/01/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Acetone	EPA-8260	U	25	1	UG/L	04/01/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	04/01/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	04/01/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Butanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	04/01/2015	DLC
Benzene	EPA-8260	U	0.028	1	UG/L	04/01/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	04/01/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-10
		DATE RECEIVED:	03/26/2015
CLIENT SAMPLE ID	MW-104-032415	COLLECTION DATE:	3/24/2015 6:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Hexanone	EPA-8260	U	10	1	UG/L	04/01/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	04/01/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	04/01/2015	DLC
Styrene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	04/01/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	04/01/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	04/01/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2015	DLC
Naphthalene	EPA-8270 SIM	0.017	0.013	1	UG/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	UG/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-10
		DATE RECEIVED:	03/26/2015
CLIENT SAMPLE ID	MW-104-032415	COLLECTION DATE:	3/24/2015 6:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	0.012	0.01	1	UG/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	UG/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	03/31/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	UG/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	UG/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-10
CLIENT SAMPLE ID	MW-104-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 6:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	UG/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1242	EPA-8082	0.025	0.0050	1	UG/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-10
CLIENT SAMPLE ID	MW-104-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 6:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endosulfan II	EPA-8081	0.011	0.010	1	UG/L	04/03/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	04/03/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	04/03/2015	CAS
Total Dissolved Solids	SM2540C	210	5.0	1	MG/L	03/31/2015	DLC
Chloride	EPA-300.0	15	0.092	1	MG/L	03/26/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/26/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/26/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/26/2015	DNT
Sulfate	EPA-300.0	17	0.26	1	MG/L	03/26/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	04/01/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	03/27/2015	RAL
Arsenic	EPA-200.8	6.7	0.50	1	UG/L	03/30/2015	RAL
Barium	EPA-200.8	51	1.0	1	UG/L	03/30/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium	EPA-200.8	38000	100	1	UG/L	03/30/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron	EPA-200.8	28000	50	1	UG/L	03/30/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium	EPA-200.8	14000	50	1	UG/L	03/30/2015	RAL
Manganese	EPA-200.8	2100	2.0	1	UG/L	03/30/2015	RAL
Potassium	EPA-200.8	6800	50	1	UG/L	03/30/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium	EPA-200.8	18000	50	1	UG/L	03/30/2015	RAL
Arsenic (Dissolved)	EPA-200.8	6.4	0.50	1	UG/L	03/30/2015	RAL
Barium (Dissolved)	EPA-200.8	51	1.0	1	UG/L	03/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030143-10
CLIENT SAMPLE ID	MW-104-032415	DATE RECEIVED:	03/26/2015
		COLLECTION DATE:	3/24/2015 6:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	38000	100	1	UG/L	03/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron (Dissolved)	EPA-200.8	28000	50	1	UG/L	03/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	14000	50	1	UG/L	03/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	2100	2.0	1	UG/L	03/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	6800	50	1	UG/L	03/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	18000	50	1	UG/L	03/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	180	0.0	1	MG/L	04/01/2015	CAS
Bicarbonate as CaCO3	SM2320B	180	0.0	1	MG/L	04/01/2015	CAS
Ammonia as N	EPA-350.1	1.7	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.2	0.50	1	MG/L	03/27/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	95.8	03/26/2015	EBS
C25	NWTPH-HCID	73.0	03/26/2015	EBS
C25 (conc)	NWTPH-HCID	74.4	03/26/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	99.0	04/01/2015	DLC
Toluene-d8	EPA-8260	101	04/01/2015	DLC
4-Bromofluorobenzene	EPA-8260	100	04/01/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	76.3	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	109	03/31/2015	GAP
2-Fluorophenol	EPA-8270	51.5	03/30/2015	GAP
Phenol-d5	EPA-8270	31.5	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	89.6	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	80.4	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	122 SQ1	03/30/2015	GAP
Terphenyl-d14	EPA-8270	112	03/30/2015	GAP
DCB	EPA-8082	86.0	04/06/2015	CAS
TCMX	EPA-8081	66.0	04/03/2015	CAS
DCB	EPA-8081	80.0	04/03/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
 SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 6/19/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030143
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MB-032515W - Batch 91748 - Water by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	UG/L	03/25/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	UG/L	03/25/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	UG/L	03/25/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032615W - Batch 91823 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	03/27/2015	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	03/27/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-033115W - Batch 92033 - Water by EPA-8260 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	03/31/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	03/31/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	03/31/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	03/31/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	03/31/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	03/31/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	03/31/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	03/31/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	03/31/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	03/31/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	03/31/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-033115W - Batch 92033 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 6/19/2015 ALS SDG#: EV15030143 WDOE ACCREDITATION: C601
CLIENT CONTACT:	Jeffrey Fellows	
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	

LABORATORY BLANK RESULTS

MB-033115W - Batch 92033 - Water by EPA-8260

Acetone	EPA-8260	U	25	1	UG/L	03/31/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	03/31/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	03/31/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	03/31/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
2-Butanone	EPA-8260	U	10	1	UG/L	03/31/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	03/31/2015	DLC
Benzene	EPA-8260	U	0.028	1	UG/L	03/31/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	03/31/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	03/31/2015	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
2-Hexanone	EPA-8260	U	10	1	UG/L	03/31/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	03/31/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	03/31/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	03/31/2015	DLC
Styrene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	03/31/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-033115W - Batch 92033 - Water by EPA-8260

S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	03/31/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	03/31/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/31/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032515W - Batch 91884 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.012	1	UG/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.0089	1	UG/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0067	1	UG/L	03/31/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.17	1	UG/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.017	1	UG/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.023	1	UG/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.040	1	UG/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.035	1	UG/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.019	1	UG/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.025	1	UG/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.022	1	UG/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.019	1	UG/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.018	1	UG/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.018	1	UG/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.015	1	UG/L	03/31/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032515W - Batch 91898 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-032515W - Batch 91898 - Water by EPA-8270

N-Nitrosodimethylamine	EPA-8270	U	1.5	1	UG/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	UG/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	UG/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.90	1	UG/L	03/30/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	UG/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	UG/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 6/19/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030143
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MB-032515W - Batch 91898 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Azobenzene	EPA-8270	U	1.6	1	UG/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Pyrene	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.81	1	UG/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	03/30/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/06/2015 - Batch R253760 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	04/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/04/2015 - Batch R253759 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 6/19/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030143
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MB1-04/04/2015 - Batch R253759 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	04/04/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	04/04/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-3312015 - Batch R251950 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	03/31/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-412015 - Batch R252405 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	04/01/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-3262015 - Batch R252394 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	03/26/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/26/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/26/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/26/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/26/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-3312015 - Batch R252400 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	03/31/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/31/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 6/19/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030143
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MBLK-472015 - Batch R252408 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Sulfate	EPA-300.0	U	0.26	1	MG/L	04/07/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-252214 - Batch R252214 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.11	1	UG/L	04/01/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-3272015 - Batch R252409 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	03/27/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032715W - Batch 91827 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	0.50	1	UG/L	03/30/2015	RAL
Barium	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium	EPA-200.8	U	100	1	UG/L	03/30/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron	EPA-200.8	U	50	1	UG/L	03/30/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium	EPA-200.8	U	50	1	UG/L	03/30/2015	RAL
Manganese	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Potassium	EPA-200.8	U	50	1	UG/L	03/30/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium	EPA-200.8	U	50	1	UG/L	03/30/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032715W - Batch 91828 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved)	EPA-200.8	U	0.50	1	UG/L	03/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-032715W - Batch 91828 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Barium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	03/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	U	100	1	UG/L	03/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	UG/L	03/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	03/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	U	50	1	UG/L	03/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	UG/L	03/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	U	50	1	UG/L	03/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	03/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	03/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	U	50	1	UG/L	03/30/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/01/2015 - Batch R253756 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	04/01/2015	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	04/01/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/06/2015 - Batch R253757 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-03/27/2015 - Batch R253758 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	03/27/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB2-03/30/2015 - Batch R253758 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	03/30/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 91823 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	86.9			03/27/2015	EBS
TPH-Diesel Range - BSD	NWTPH-DX	88.8	2		03/27/2015	EBS

ALS Test Batch ID: 92033 - Water by EPA-8260 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Trichloroethene - BS	EPA-8260 SIM	113			03/31/2015	DLC
Trichloroethene - BSD	EPA-8260 SIM	114	1		03/31/2015	DLC

ALS Test Batch ID: 92033 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	109			03/31/2015	DLC
1,1-Dichloroethene - BSD	EPA-8260	109	1		03/31/2015	DLC
Benzene - BS	EPA-8260	104			03/31/2015	DLC
Benzene - BSD	EPA-8260	104	0		03/31/2015	DLC
Toluene - BS	EPA-8260	108			03/31/2015	DLC
Toluene - BSD	EPA-8260	108	0		03/31/2015	DLC
Chlorobenzene - BS	EPA-8260	108			03/31/2015	DLC
Chlorobenzene - BSD	EPA-8260	109	1		03/31/2015	DLC

ALS Test Batch ID: 91898 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	34.5			03/30/2015	GAP
Phenol - BSD	EPA-8270	34.4	0		03/30/2015	GAP
2-Chlorophenol - BS	EPA-8270	92.0			03/30/2015	GAP
2-Chlorophenol - BSD	EPA-8270	92.8	1		03/30/2015	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	189		SQ1	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	195	3	SQ1	03/30/2015	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	97.0			03/30/2015	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	100	3		03/30/2015	GAP
4-Nitrophenol - BS	EPA-8270	19.5			03/30/2015	GAP
4-Nitrophenol - BSD	EPA-8270	17.3	12		03/30/2015	GAP
2,4-Dinitrotoluene - BS	EPA-8270	86.1			03/30/2015	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	83.7	3		03/30/2015	GAP
Pyrene - BS	EPA-8270	120			03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Pyrene - BSD	EPA-8270	128	6		03/30/2015	GAP

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

ALS Test Batch ID: R253760 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	84.5			04/06/2015	CAS
PCB-1016 - BSD	EPA-8082	70.0	19		04/06/2015	CAS
PCB-1260 - BS	EPA-8082	122		SQ1	04/06/2015	CAS
PCB-1260 - BSD	EPA-8082	111	9	SQ1	04/06/2015	CAS

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

ALS Test Batch ID: R253759 - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	84.5			04/03/2015	CAS
A-BHC - BSD	EPA-8081	72.5	15		04/03/2015	CAS
G-BHC - BS	EPA-8081	84.5			04/03/2015	CAS
G-BHC - BSD	EPA-8081	73.0	15		04/03/2015	CAS
B-BHC - BS	EPA-8081	85.0			04/03/2015	CAS
B-BHC - BSD	EPA-8081	73.5	15		04/03/2015	CAS
Heptachlor - BS	EPA-8081	79.5			04/03/2015	CAS
Heptachlor - BSD	EPA-8081	69.5	13		04/03/2015	CAS
D-BHC - BS	EPA-8081	87.0			04/03/2015	CAS
D-BHC - BSD	EPA-8081	74.5	15		04/03/2015	CAS
Aldrin - BS	EPA-8081	67.0			04/03/2015	CAS
Aldrin - BSD	EPA-8081	55.5	19		04/03/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	83.5			04/03/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	72.5	14		04/03/2015	CAS
Chlordane - BS	EPA-8081	80.0			04/03/2015	CAS
Chlordane - BSD	EPA-8081	69.5	14		04/03/2015	CAS
Endosulfan I - BS	EPA-8081	62.0			04/03/2015	CAS
Endosulfan I - BSD	EPA-8081	54.0	14		04/03/2015	CAS
4,4'-DDE - BS	EPA-8081	81.0			04/03/2015	CAS
4,4'-DDE - BSD	EPA-8081	70.0	15		04/03/2015	CAS
Dieldrin - BS	EPA-8081	84.5			04/03/2015	CAS
Dieldrin - BSD	EPA-8081	73.0	15		04/03/2015	CAS
Endrin - BS	EPA-8081	89.5			04/03/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 6/19/2015 ALS SDG#: EV15030143 WDOE ACCREDITATION: C601
CLIENT CONTACT:	Jeffrey Fellows	
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Endrin - BSD	EPA-8081	77.0	15		04/03/2015	CAS
4,4'-DDD - BS	EPA-8081	83.0			04/03/2015	CAS
4,4'-DDD - BSD	EPA-8081	72.0	14		04/03/2015	CAS
Endosulfan II - BS	EPA-8081	67.5			04/03/2015	CAS
Endosulfan II - BSD	EPA-8081	58.5	14		04/03/2015	CAS
4,4'-DDT - BS	EPA-8081	88.0			04/03/2015	CAS
4,4'-DDT - BSD	EPA-8081	76.5	14		04/03/2015	CAS
Endrin Aldehyde - BS	EPA-8081	82.5			04/03/2015	CAS
Endrin Aldehyde - BSD	EPA-8081	72.0	14		04/03/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	83.5			04/03/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	72.5	14		04/03/2015	CAS
Methoxychlor - BS	EPA-8081	85.5			04/03/2015	CAS
Methoxychlor - BSD	EPA-8081	75.5	12		04/03/2015	CAS
Hexachlorobenzene - BS	EPA-8081	82.0			04/03/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	71.0	14		04/03/2015	CAS
Toxaphene - BS	EPA-8081	98.9			04/03/2015	CAS
Toxaphene - BSD	EPA-8081	91.1	8		04/04/2015	CAS

ALS Test Batch ID: R251950 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	96.0			03/31/2015	DLC

ALS Test Batch ID: R252405 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	110			04/01/2015	DLC

ALS Test Batch ID: R252394 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	97.0			03/26/2015	DNT
Chloride - BSD	EPA-300.0	96.0	1		03/26/2015	DNT
Fluoride - BS	EPA-300.0	106			03/26/2015	DNT
Fluoride - BSD	EPA-300.0	103	3		03/26/2015	DNT
Nitrate as N - BS	EPA-300.0	104			03/26/2015	DNT
Nitrate as N - BSD	EPA-300.0	106	2		03/26/2015	DNT
Nitrite as N - BS	EPA-300.0	94.0			03/26/2015	DNT



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Nitrite as N - BSD	EPA-300.0	95.0	1		03/26/2015	DNT
Sulfate - BS	EPA-300.0	99.0			03/26/2015	DNT
Sulfate - BSD	EPA-300.0	99.0	0		03/26/2015	DNT

ALS Test Batch ID: R252400 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	95.0			03/31/2015	DNT
Chloride - BSD	EPA-300.0	95.0	0		03/31/2015	DNT
Sulfate - BS	EPA-300.0	98.0			03/31/2015	DNT
Sulfate - BSD	EPA-300.0	106	8		03/31/2015	DNT

ALS Test Batch ID: R252408 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Sulfate - BS	EPA-300.0	101			04/07/2015	DNT
Sulfate - BSD	EPA-300.0	101	0		04/07/2015	DNT

ALS Test Batch ID: R252214 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	92.0			04/01/2015	RAL
Mercury - BSD	EPA-7470	97.0	5		04/01/2015	RAL

ALS Test Batch ID: R252409 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	89.0			03/27/2015	RAL
Mercury (Dissolved) - BSD	EPA-7470	96.0	8		03/27/2015	RAL

ALS Test Batch ID: 91827 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	96.9			03/30/2015	RAL
Arsenic - BSD	EPA-200.8	98.6	2		03/30/2015	RAL
Barium - BS	EPA-200.8	99.0			03/30/2015	RAL
Barium - BSD	EPA-200.8	98.6	0		03/30/2015	RAL
Cadmium - BS	EPA-200.8	98.2			03/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Cadmium - BSD	EPA-200.8	98.1	0		03/30/2015	RAL
Calcium - BS	EPA-200.8	97.0			03/30/2015	RAL
Calcium - BSD	EPA-200.8	96.5	0		03/30/2015	RAL
Chromium - BS	EPA-200.8	96.2			03/30/2015	RAL
Chromium - BSD	EPA-200.8	97.7	2		03/30/2015	RAL
Iron - BS	EPA-200.8	97.2			03/30/2015	RAL
Iron - BSD	EPA-200.8	97.9	1		03/30/2015	RAL
Lead - BS	EPA-200.8	97.8			03/30/2015	RAL
Lead - BSD	EPA-200.8	97.5	0		03/30/2015	RAL
Magnesium - BS	EPA-200.8	95.5			03/30/2015	RAL
Magnesium - BSD	EPA-200.8	95.9	0		03/30/2015	RAL
Manganese - BS	EPA-200.8	96.4			03/30/2015	RAL
Manganese - BSD	EPA-200.8	97.8	1		03/30/2015	RAL
Potassium - BS	EPA-200.8	95.6			03/30/2015	RAL
Potassium - BSD	EPA-200.8	95.6	0		03/30/2015	RAL
Selenium - BS	EPA-200.8	99.0			03/30/2015	RAL
Selenium - BSD	EPA-200.8	98.6	0		03/30/2015	RAL
Silver - BS	EPA-200.8	99.4			03/30/2015	RAL
Silver - BSD	EPA-200.8	102	2		03/30/2015	RAL
Sodium - BS	EPA-200.8	95.3			03/30/2015	RAL
Sodium - BSD	EPA-200.8	95.8	0		03/30/2015	RAL

ALS Test Batch ID: 91828 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	96.9			03/30/2015	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	98.6	2		03/30/2015	RAL
Barium (Dissolved) - BS	EPA-200.8	99.0			03/30/2015	RAL
Barium (Dissolved) - BSD	EPA-200.8	98.6	0		03/30/2015	RAL
Cadmium (Dissolved) - BS	EPA-200.8	98.2			03/30/2015	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	98.1	0		03/30/2015	RAL
Calcium (Dissolved) - BS	EPA-200.8	97.0			03/30/2015	RAL
Calcium (Dissolved) - BSD	EPA-200.8	96.5	0		03/30/2015	RAL
Chromium (Dissolved) - BS	EPA-200.8	96.2			03/30/2015	RAL
Chromium (Dissolved) - BSD	EPA-200.8	97.7	2		03/30/2015	RAL
Iron (Dissolved) - BS	EPA-200.8	97.2			03/30/2015	RAL
Iron (Dissolved) - BSD	EPA-200.8	97.9	1		03/30/2015	RAL
Lead (Dissolved) - BS	EPA-200.8	97.8			03/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Lead (Dissolved) - BSD	EPA-200.8	97.5	0		03/30/2015	RAL
Magnesium (Dissolved) - BS	EPA-200.8	95.5			03/30/2015	RAL
Magnesium (Dissolved) - BSD	EPA-200.8	95.9	0		03/30/2015	RAL
Manganese (Dissolved) - BS	EPA-200.8	96.4			03/30/2015	RAL
Manganese (Dissolved) - BSD	EPA-200.8	97.8	1		03/30/2015	RAL
Potassium (Dissolved) - BS	EPA-200.8	95.6			03/30/2015	RAL
Potassium (Dissolved) - BSD	EPA-200.8	95.6	0		03/30/2015	RAL
Selenium (Dissolved) - BS	EPA-200.8	99.0			03/30/2015	RAL
Selenium (Dissolved) - BSD	EPA-200.8	98.6	0		03/30/2015	RAL
Silver (Dissolved) - BS	EPA-200.8	99.4			03/30/2015	RAL
Silver (Dissolved) - BSD	EPA-200.8	102	2		03/30/2015	RAL
Sodium (Dissolved) - BS	EPA-200.8	95.3			03/30/2015	RAL
Sodium (Dissolved) - BSD	EPA-200.8	95.8	0		03/30/2015	RAL

ALS Test Batch ID: R253756 - Water by SM2320B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total - BS	SM2320B	104			04/01/2015	CAS

ALS Test Batch ID: R253757 - Water by EPA-350.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N 5X Dilution - BS	EPA-350.1	98.7			04/06/2015	CAS

ALS Test Batch ID: R253758 - Water by SM5310C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - BS	SM5310C	101			03/27/2015	CAS
Total Organic Carbon (TOC) - BS	SM5310C	97.5			03/30/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/19/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030143
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

MATRIX SPIKE RESULTS

ALS Test Batch ID: R253757 - Water

Parent Sample: TP-MW-1-032515

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N - MS	EPA-350.1	0	2.00	2.02		101		04/06/2015	CAS
Ammonia as N - MSD	EPA-350.1	0	2.00	1.98	2	99.0		04/06/2015	CAS

ALS Test Batch ID: R253758 - Water

Parent Sample: TP-MW-1-032515

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - MS	SM5310C	2.2	25.0	28.3		104		03/27/2015	CAS

APPROVED BY



Laboratory Director



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080

Chain-of-Custody Record

EV15030143

Date 3/25/15
Page 1 of 2

pg 1a

Project Name Closed City of Yakima Landfill Project No. 1148008.030.032

Project Location/Event Closed Yakima Landfill, WA / 3rd Quarter GW

Sampler's Name Stephanie Renando, Shane Kostka

Project Contact Jeffrey Fellows

Send Results To J. Fellows, A. Halverson, K. Schultz

Sample I.D.	Date	Time	Matrix	No. of Containers	Metals (Total)*	Mercury (Total)*	Mercury (Dissolved)*	Chlorinated Hydrocarbons	VOC's	SVOC's	TPH's	TPH-KTD**	TPH-DX**	TPH-D	Observations/Comments
1 TP-MW-1-032515	3/25/15	0945	AQ	5	X	X	X	X	X	X	X	X	X	X	X Allow water samples to settle, collect aliquot from clear portion NWTPH-Dx - run acid wash silica gel cleanup Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt <input type="checkbox"/> Dissolved metal water samples field filtered Other <u>*As, Ba, Ca, Cd, Cr, Fe, K, Pb, Mg, Mn, Na, Ni, Se, Ag</u> <u>** Ruh w/ AND w/out Silica gel cleanup</u> <u>O Hold Pending HCID result.</u>
2 TP- MW-2-032515	3/25/15	1000	AQ	5	X	X	X	X	X	X	X	X	X	X	
3 MW-12-032515	3/25/15	1140	AQ	11	X	X	X	X	X	X	X	X	X	X	
4 MW-101-032515	3/25/15	1135	AQ	11	X	X	X	X	X	X	X	X	X	X	
5 MW-108-032515	3/25/15	1315	AQ	14	X	X	X	X	X	X	X	X	X	X	
6 MW-8-032515	3/25/15	1435	AQ	14	X	X	X	X	X	X	X	X	X	X	
7 Trip Blanks	3/25/15	—	AQ	2	X	X	X	X	X	X	X	X	X	X	
8 MW-105-032415	3/24/15	1655	AQ	14	X	X	X	X	X	X	X	X	X	X	
9 MW-103-032415	3/24/15	1830	AQ	14	X	X	X	X	X	X	X	X	X	X	
10 MW-104-032415	3/24/15	1805	AQ	14	X	X	X	X	X	X	X	X	X	X	

Note: Samples for dissolved analytes were field filtered.

Special Shipment/Handling or Storage Requirements on ice

Method of Shipment Fed Ex

Relinquished by	Received by
Signature <u>Stephanie Renando</u>	Signature <u>Shawn Robinson</u>
Printed Name <u>Stephanie Renando</u>	Printed Name <u>Shawn Robinson</u>
Company <u>Landaw Associates</u>	Company <u>ALS</u>
Date <u>3/25/15</u> Time <u>1600</u>	Date <u>3/26/15</u> Time <u>10:30 am</u>

Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____

Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____

Chain-of-Custody Record

- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080



Project Information				Testing Parameters			
Sample I.D.	Date	Time	Matrix	No. of Containers	Conductivity/TDS	Alkalinity	Bicarbonate
Project Name: <u>Closed City of Yakima Landfill</u> Project No.: <u>1148008.030.032</u> Project Location/Event: <u>Closed Yakima Landfill, WA, 3rd Quarter GW</u> Sampler's Name: <u>Stephanie Renardo, Shane Kostka</u> Project Contact: <u>Jeffrey Fellows</u> Send Results To: <u>J. Fellows, A. Halvorsen, K. Schultz</u>				Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____			
1	TP-MW-1-032515	3/25/15	AQ	5	X	X	X
2	TP-MW-2-032515	3/25/15	AQ	5	X	X	X
3	MW-12-032515	3/25/15	AQ	11	X	X	X
4	MW-101-032515	3/25/15	AQ	11	X	X	X
5	MW-108-032515	3/25/15	AQ	14	X	X	X
6	MW-8-032515	3/25/15	AQ	14	X	X	X
8	MW-105-032415	3/24/15	AQ	14	X	X	X
9	MW-103-032415	3/24/15	AQ	14	X	X	X
10	MW-104-032415	3/24/15	AQ	14	X	X	X
Observations/Comments <input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion <input type="checkbox"/> NWTPH-Dx - run acid wash silica gel cleanup <input type="checkbox"/> Analyze for EPH if no specific product identified VOC/BTEX/MPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt <input type="checkbox"/> Dissolved metal water samples field filtered Other: <u>Fluoride, Nitrate, Nitrite, Chloride, Sulphate.</u>							
Special Shipment/Handling or Storage Requirements: <u>On ice</u>				Method of Shipment: <u>Fed Ex</u>			
Relinquished by Signature: <u>[Signature]</u> Printed Name: <u>Stephanie Renardo</u> Company: <u>Landau Associates</u> Date: <u>3/25/15</u> Time: <u>1600</u>		Received by Signature: <u>[Signature]</u> Printed Name: <u>Shawn Robinson</u> Company: <u>ALS</u> Date: <u>3/26/15</u> Time: <u>10:30am</u>		Relinquished by Signature: _____ Printed Name: _____ Company: _____ Date: _____ Time: _____		Received by Signature: _____ Printed Name: _____ Company: _____ Date: _____ Time: _____	

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV15030143

Project: Closed City of Yakima Landfill / # 1148008.030.032

Received Date: 3/26/15 Received Time: 10:30 am By: SM

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered

FedEx Express Priority Overnight

Were custody seals on outside of sample? Yes No N/A
If yes, how many? 1 Where? Top of each cooler
Custody seal date: 3/25/15 Seal name: Landau

Was Chain of Custody properly filled out (ink, signed, dated, etc.)? Yes No N/A

Did all bottles have labels? Yes No N/A

Did all bottle labels and tags agree with Chain of Custody? Yes No N/A

Were samples received within hold time? Yes No N/A

Did all bottles arrive in good condition (unbroken, etc.)? Yes No N/A

Was sufficient amount of sample sent for the tests indicated? Yes No N/A
until containers were broken in transit

Was correct preservation added to samples? Yes No N/A

If no, Sample Control added preservative to the following:

Sample Number	Reagent	Analyte
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles? Yes No N/A

Bubbles present in sample #: None

Temperature of cooler upon receipt: 2.3°C, 5.1°C, 3.6°C, (Cold) 2.0°C all on ice Cool Ambient N/A

Explain any discrepancies: 4x bottles for MW-12 and MW-103 were broken in transit. 4 Poly bottles had broken caps. 2 nitric bottles received for MW-105 but nothing indicating which was field-filtered and which was Total.

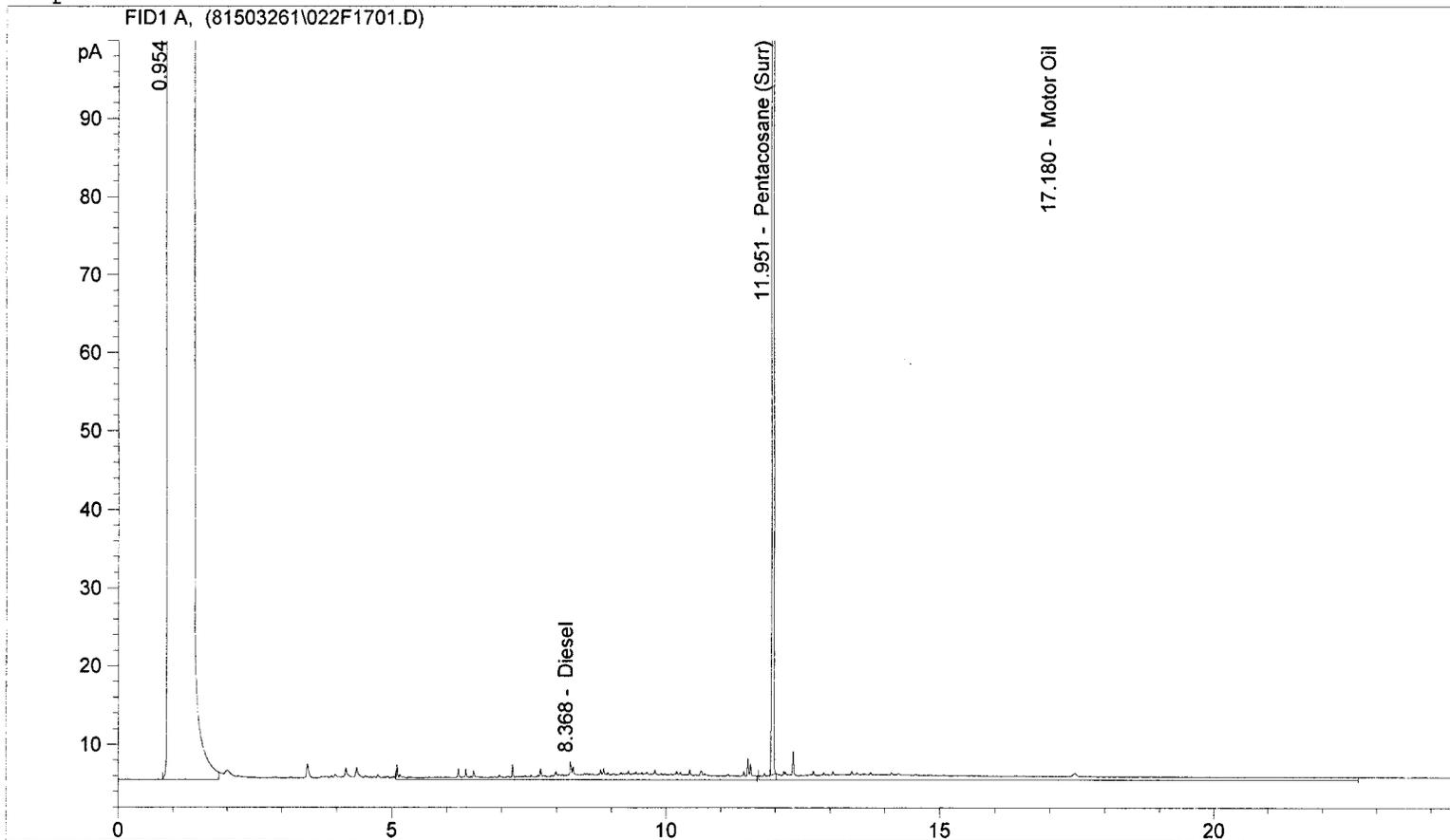
Was client contacted? Yes Who was called? Stephanie + Jeffrey By whom? P.D. Date: 3/26/15

Outcome of call: Created replacement for MW-12 4x from excess sample. Replaced caps on broken Polys. Selected clearest bottle for MW-105 and designated it as the Filtered Sample.

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\022F1701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FDMO0914.M
 Injection Date & Time: 3/26/2015 4:34:07 PM 3/26/2015 4:34:07 PM
 Report Creation: 3/27/2015 8:53:16 AM

Sample Name: EV15030143-01 W SGA

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	223.002	19.253
11.951		Pentacosane (Surr)	1082.600	44.585
17.180		Motor Oil	335.846	30.927

111%

D < 130 ug/L

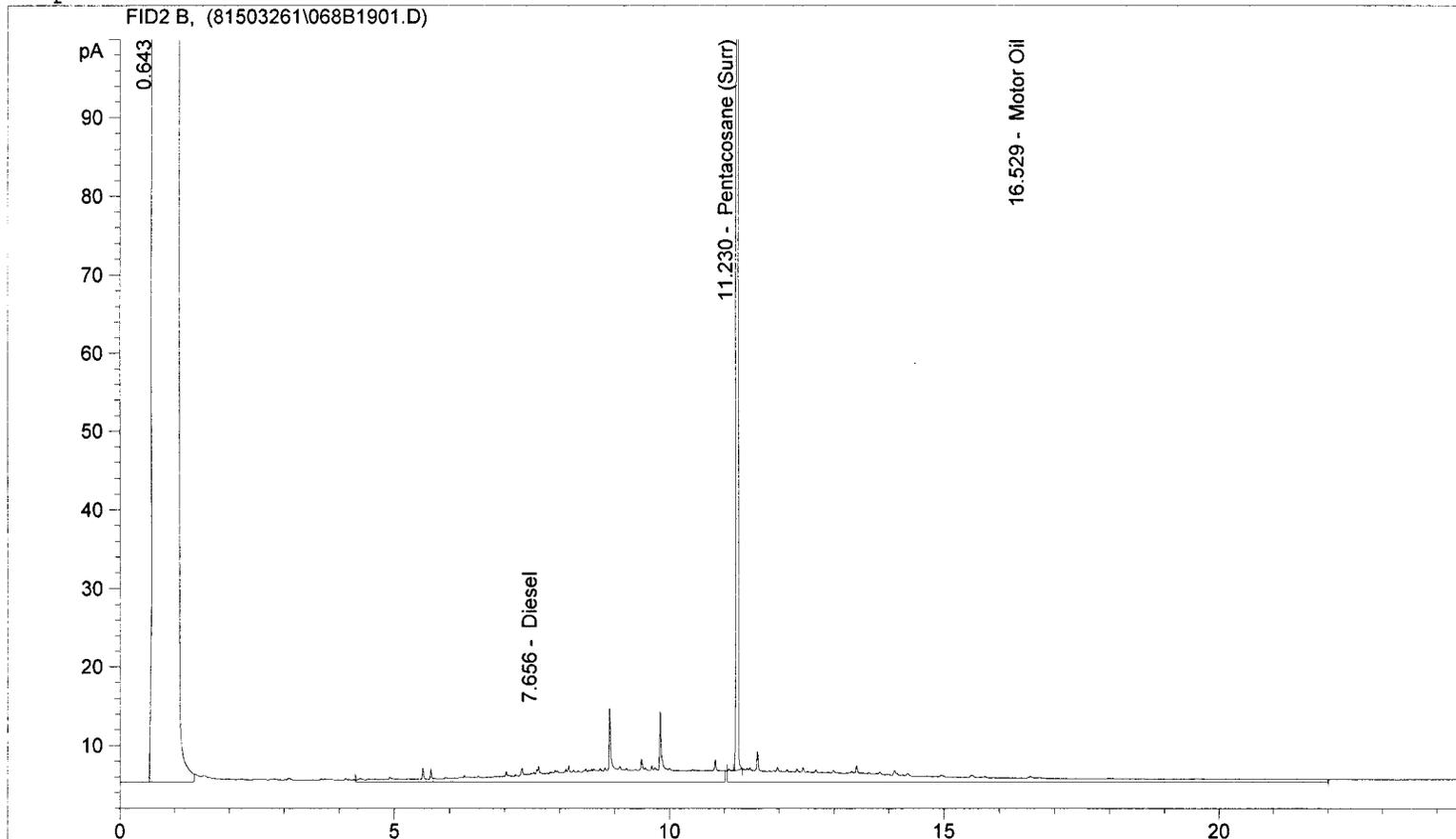
O < 250 ug/L

RL BY MS
 : 4/6/15

63.27.15ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\068B1901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BDM00315.M
 Injection Date & Time: 3/26/2015 5:35:10 PM 3/26/2015 5:35:10 PM
 Report Creation: 3/27/2015 8:50:04 AM

Sample Name: EV15030143-01 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	446.734	34.725
11.230		Pentacosane (Surr)	1077.603	38.486
16.529		Motor Oil	471.043	37.252

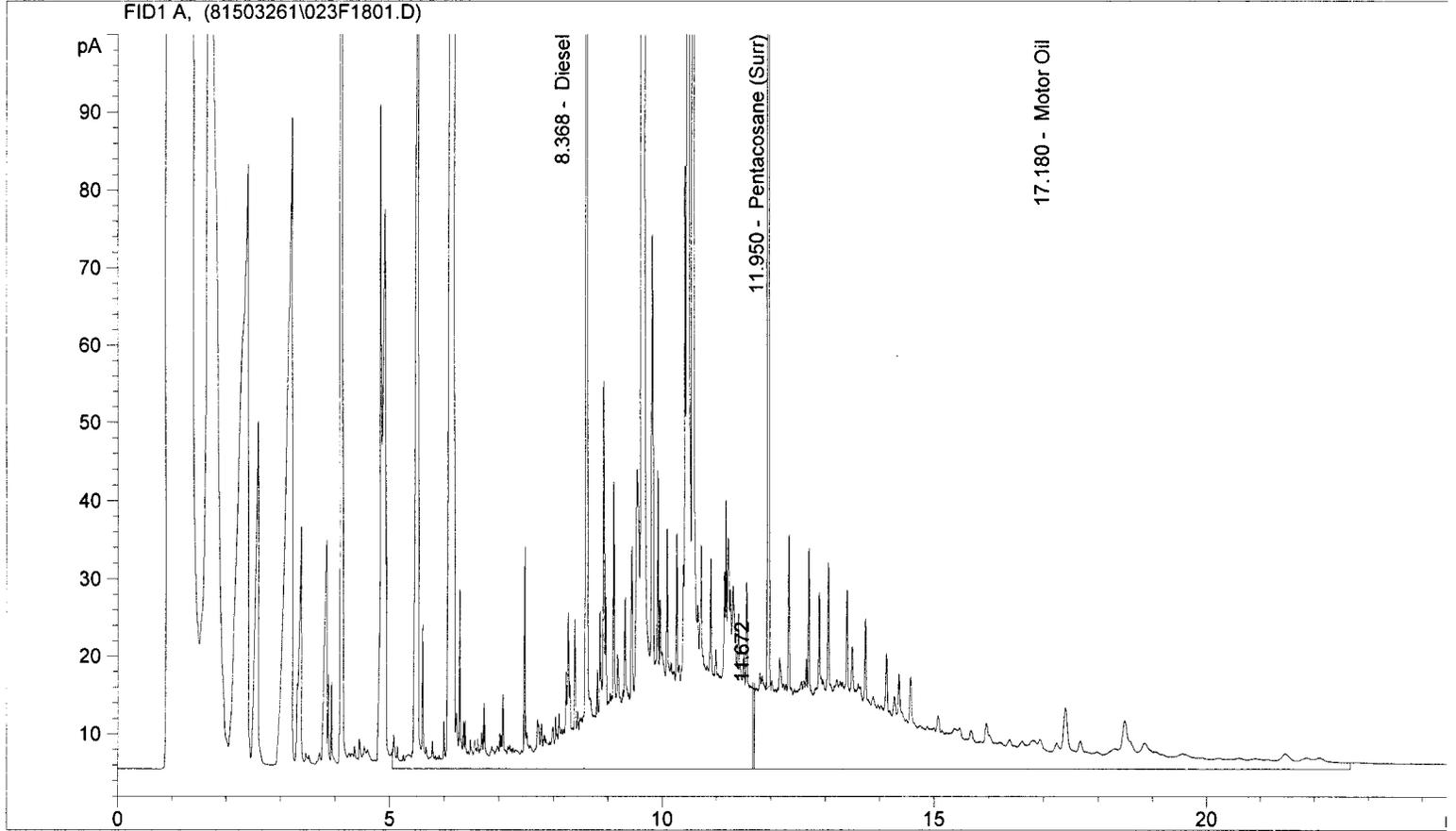
96%

D < 130 µg/L
 O < 250 µg/L

RL BY MS
 : 4/6/15

03.27.15

Sample Name: EV15030143-02 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	9538.758	823.552
11.950		Pentacosane (Surr)	826.276	34.029
17.180		Motor Oil	3084.618	284.057

85%

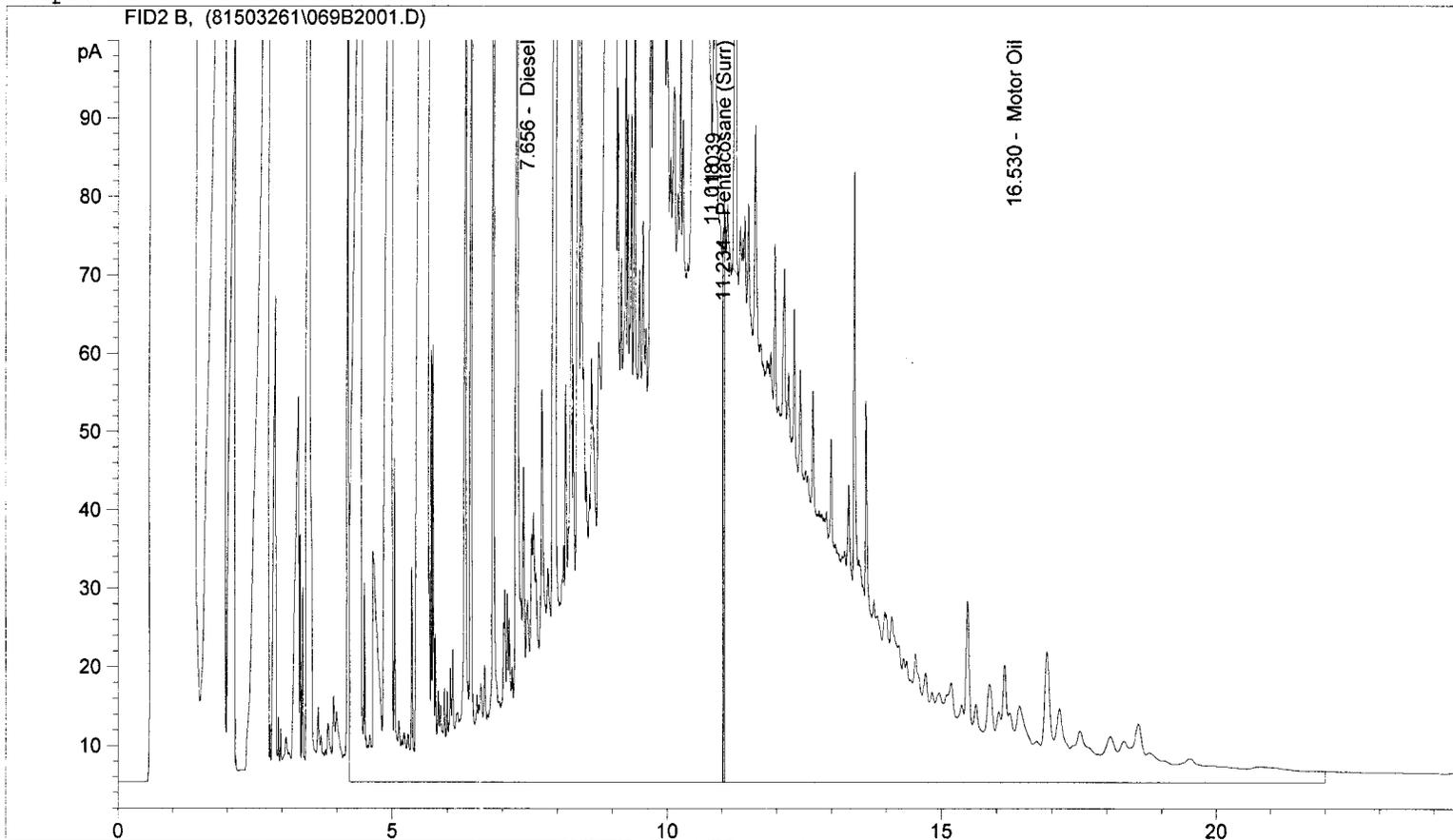
$D = 823.552 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 1600 \text{ ug/L}$ Unidentified Diesel Range Product

$O = 284.057 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 570 \text{ ug/L}$ Unidentified Oil Range Product

BY: MS
4/6/15

03.27.15 EJ

Sample Name: EV15030143-02 W
 FID2 B, (81503261\069B2001.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	39680.219	3084.361
11.234		Pentacosane (Surr)	1081.059	38.609
16.530		Motor Oil	10556.892	834.889

97%

$$D = 3084.361 \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 6200 \mu\text{g/L} \text{ Unidentified Diesel Range Product}$$

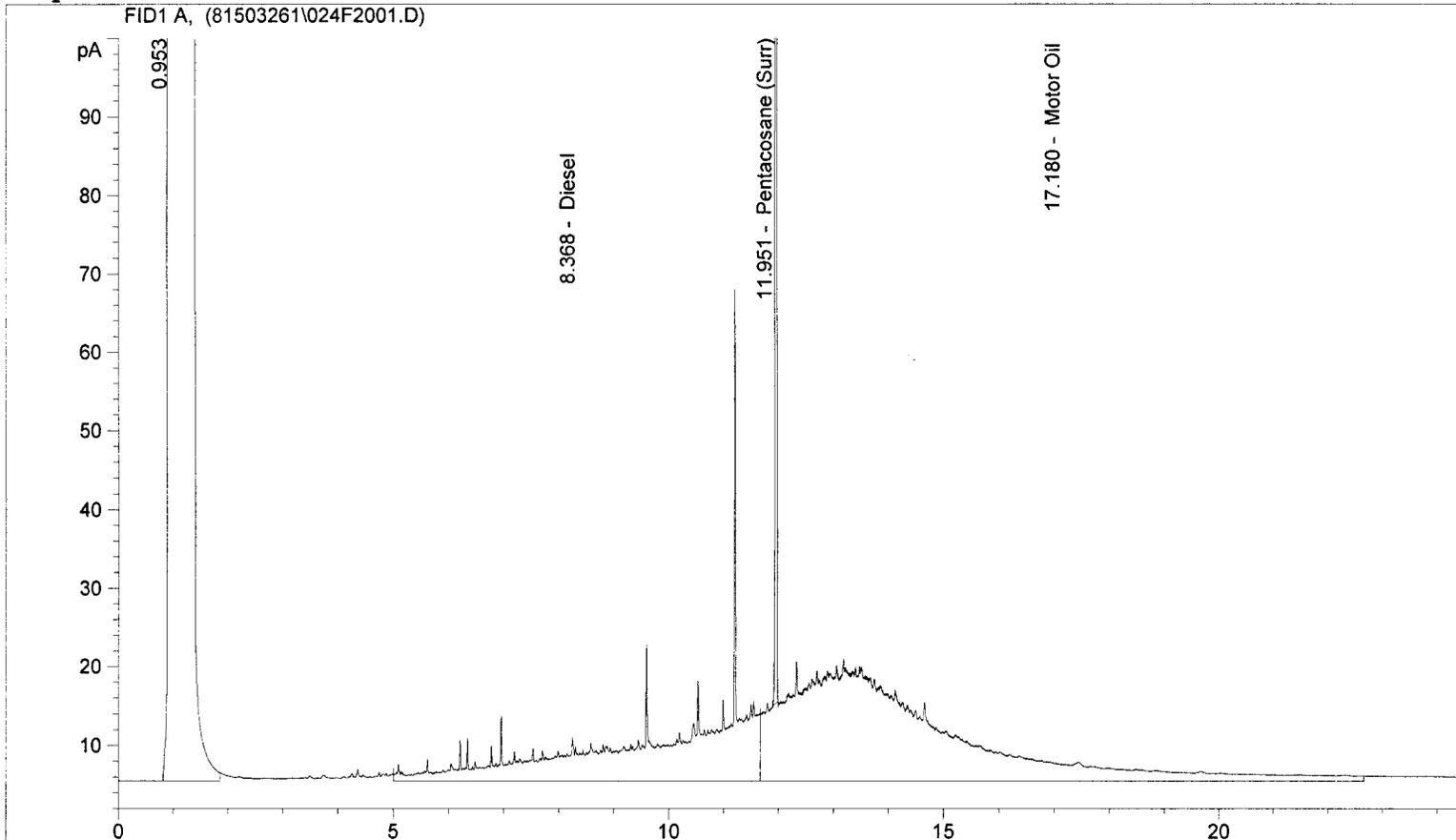
$$O = 834.889 \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 1700 \mu\text{g/L} \text{ Unidentified Oil Range Product}$$

R. B. AB
 4/6/15

03.27.15 EBS

Sample Name: EV15030143-03 W SGA

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	1545.347	133.421
11.951		Pentacosane (Surr)	1079.615	44.462
17.180		Motor Oil	2997.828	276.065

111%

$D = 133.421 \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{425 \text{ mL}} = 310 \mu\text{g/L}$ Unidentified Late Diesel
 Range Product

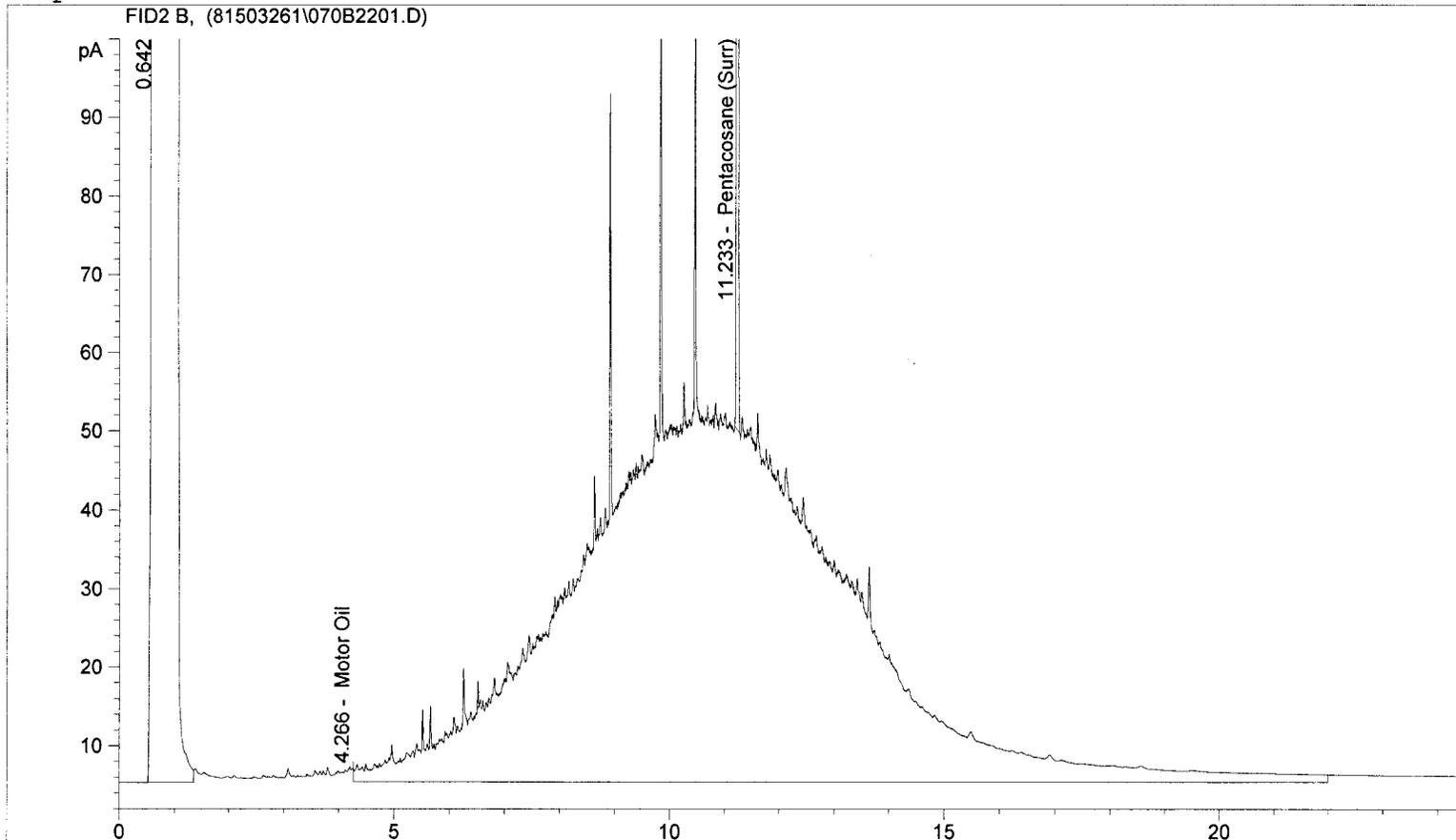
(bias high due to Oil Range Product overlap)

$D = 276.065 \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{425 \text{ mL}} = 650 \mu\text{g/L}$ Lube Oil

R. BY MS
 4/1/15 03.27.15 @

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\070B2201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BDMO0315.M
 Injection Date & Time: 3/26/2015 7:06:08 PM 3/26/2015 7:06:08 PM
 Report Creation: 3/27/2015 8:52:25 AM

Sample Name: EV15030143-03 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.266	FID2 B,	Motor Oil	16602.316	1312.990
0.000		Diesel	0.000	0.000
11.233		Pentacosane (Surr)	1350.989	48.249

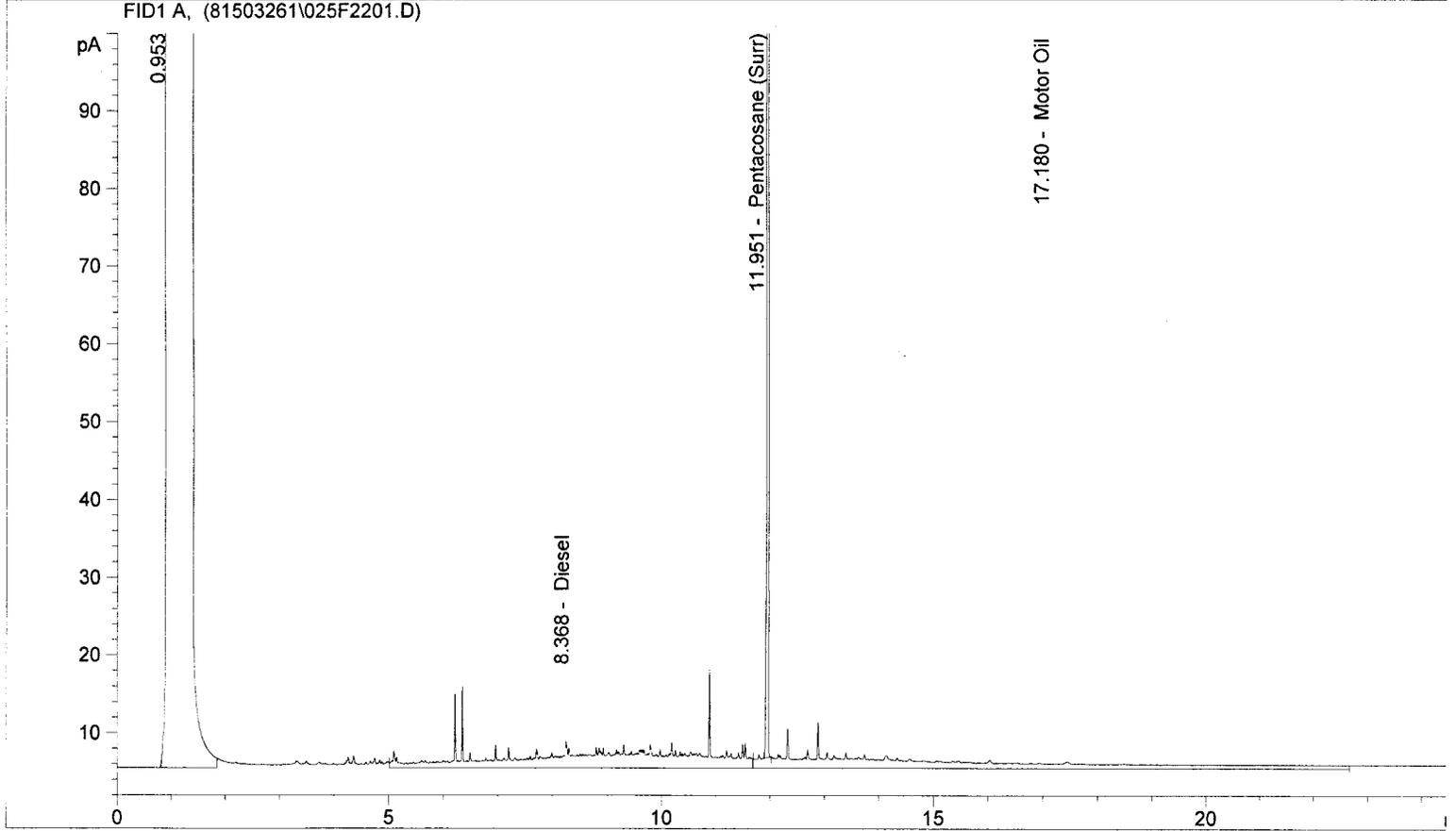
121%

$$0 = 1312.990 \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{425 \text{ mL}} = 3100 \mu\text{g/L}$$
 Unidentified Light Oil
 Range Product

03.27.15 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\025F2201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FDMO0914.M
 Injection Date & Time: 3/26/2015 7:06:08 PM 3/26/2015 7:06:08 PM
 Report Creation: 3/27/2015 8:54:34 AM

Sample Name: EV15030143-04 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	569.724	49.188
11.951		Pentacosane (Surr)	1182.772	48.710
17.180		Motor Oil	496.845	45.754

1227,

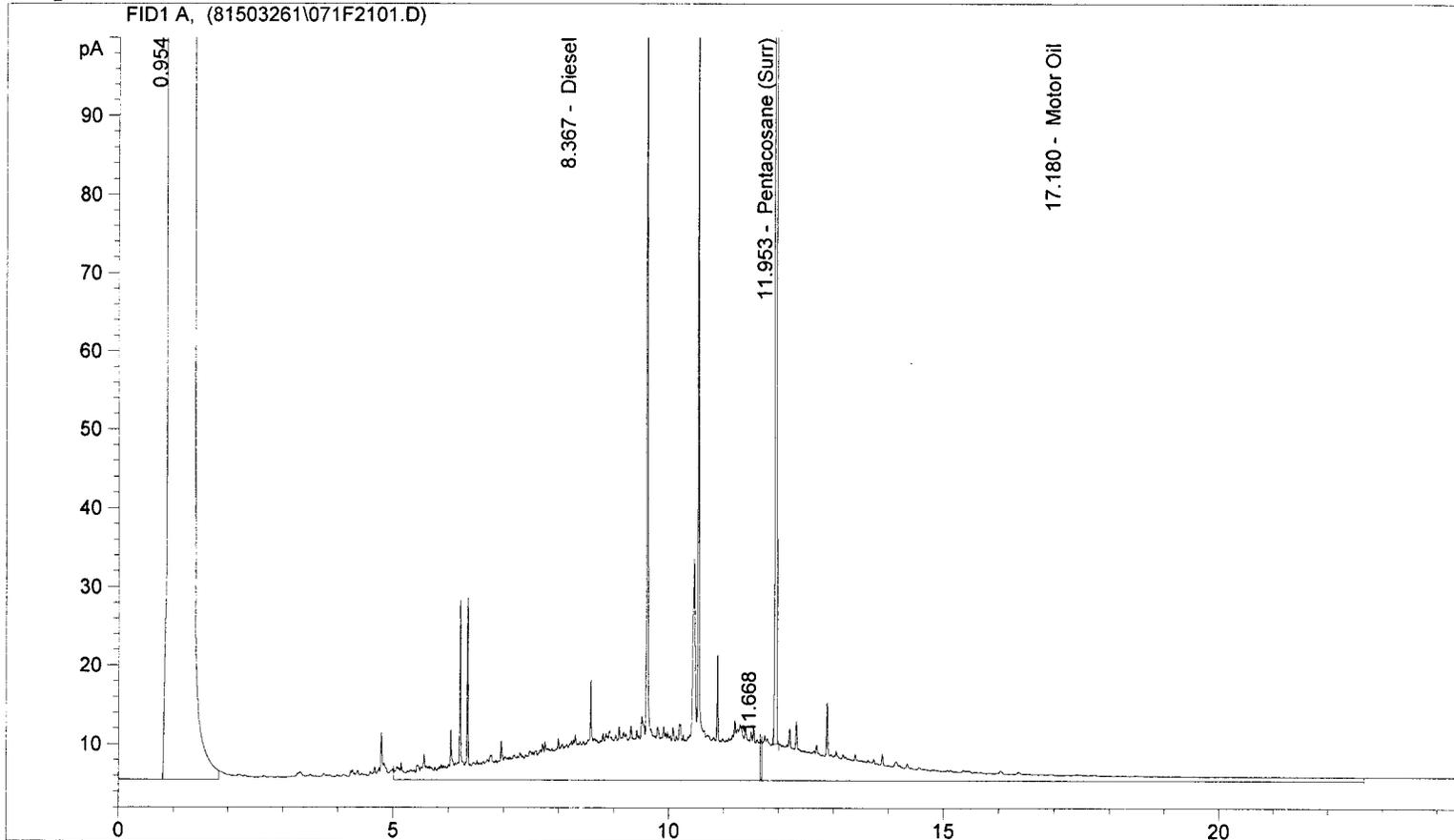
$\text{D} < 130 \mu\text{g/L}$

$\text{O} < 250 \mu\text{g/L}$

R. BY MS
 : 4/6/15

08.27.15

Sample Name: EV15030143-04 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.367	FID1 A,	Diesel	2029.737	175.242
11.953		Pentacosane (Surr)	1113.087	45.840
17.180		Motor Oil	894.699	82.391

115%

$D = 175.242 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 350 \text{ ug/L}$ Unidentified late Diesel Range Product

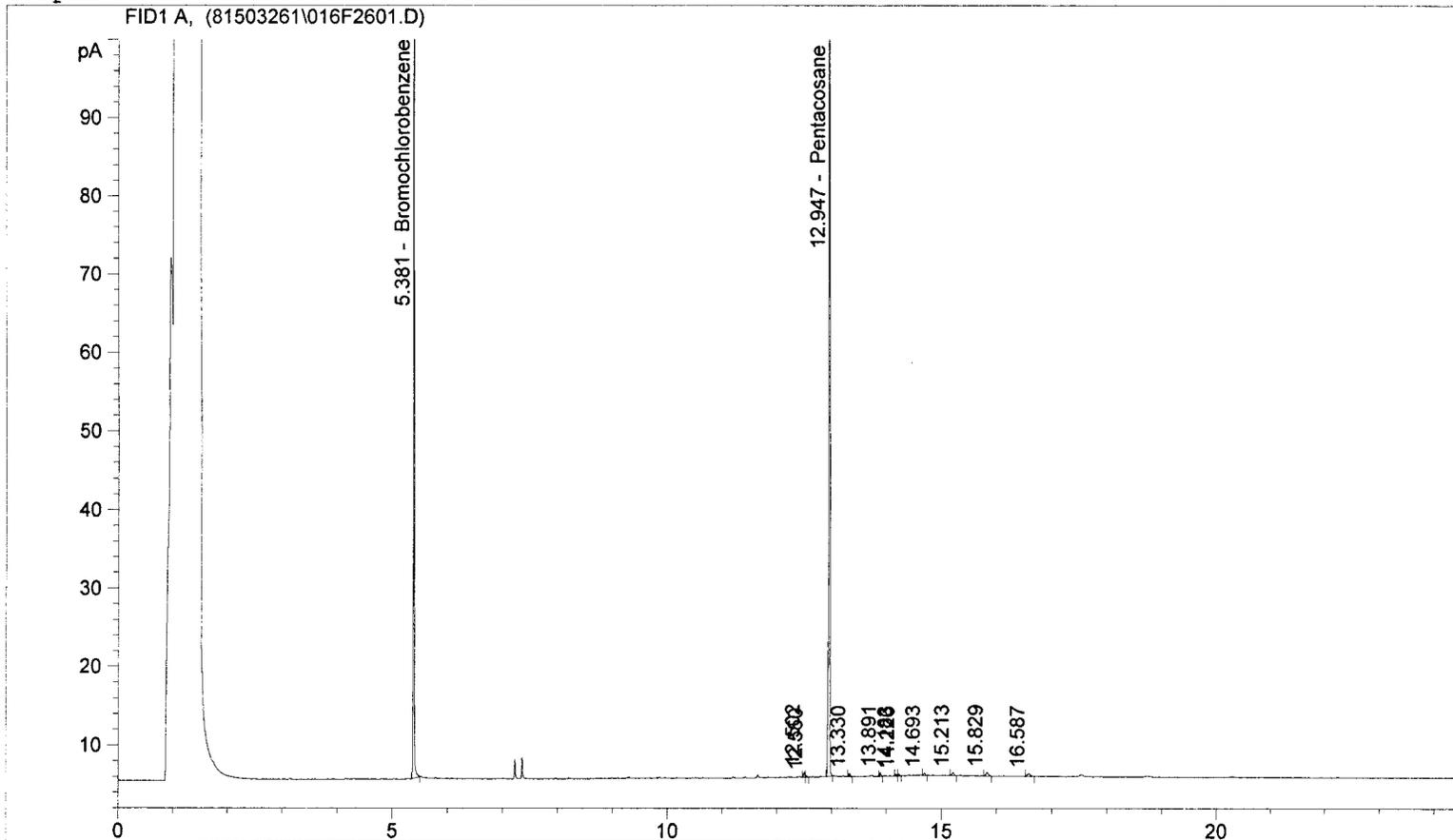
$0 < 250 \text{ ug/L}$

BY MS
4/6/15

03.27.15

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\016F2601.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 3/26/2015 9:11:07 PM 3/26/2015 9:11:07 PM
 Report Creation: 3/27/2015 8:39:26 AM

Sample Name: EV15030143-05 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.381	FID1 A,	Bromochlorobenzene	128.939	22.307
12.947		Pentacosane	147.988	7.513

89%
75%

G < 130 µg/L
 D < 310 µg/L

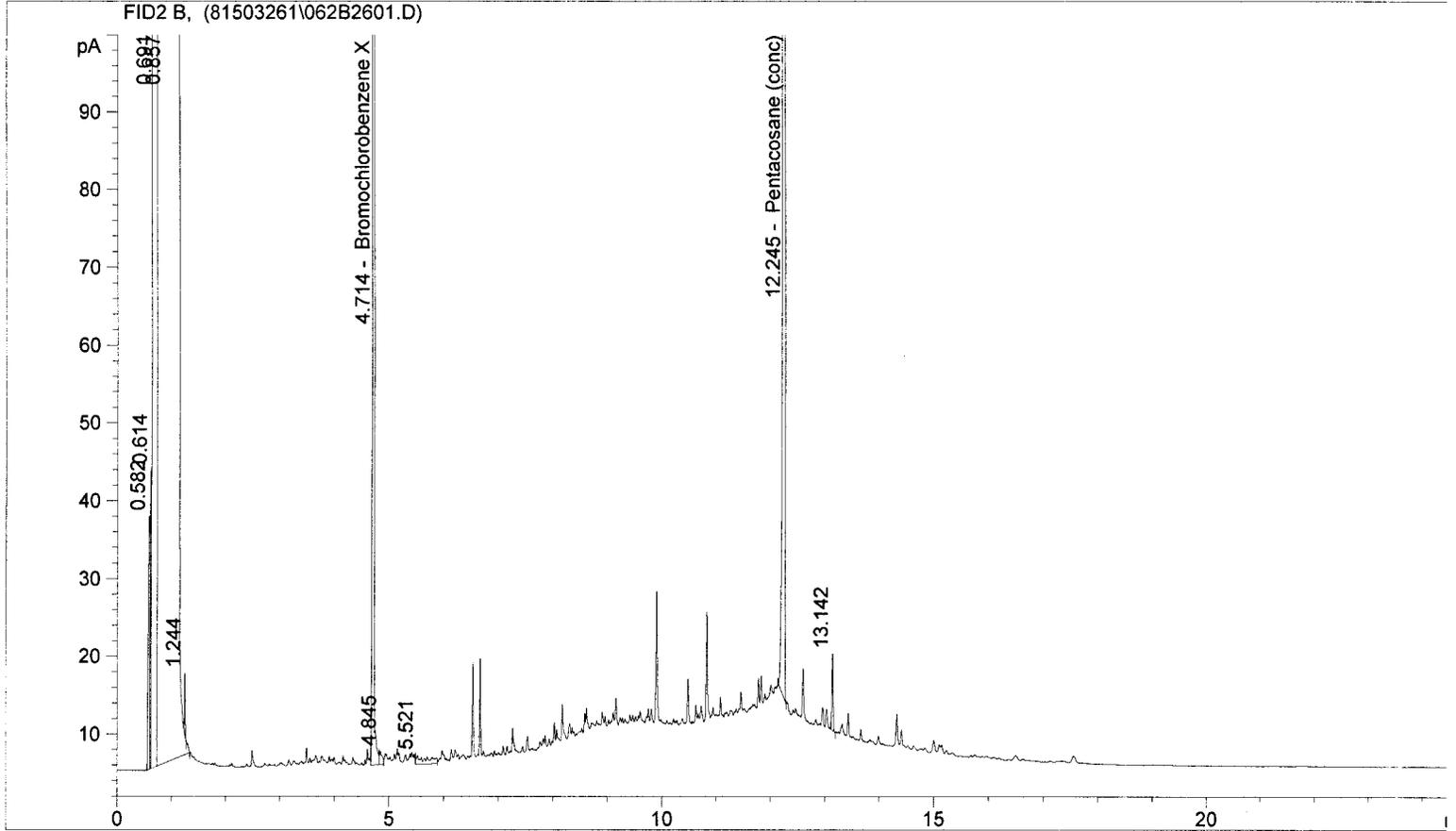
REL BY *MB*
 4/6/15

03.27.15

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\062B2601.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/26/2015 9:11:07 PM 3/26/2015 9:11:07 PM
 Report Creation: 3/27/2015 8:43:47 AM

Sample Name: EV15030143-05 1 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.714	FID2 B,	Bromochlorobenzene X	2525.410	196.628
12.245		Pentacosane (conc)	2760.308	71.643

72%

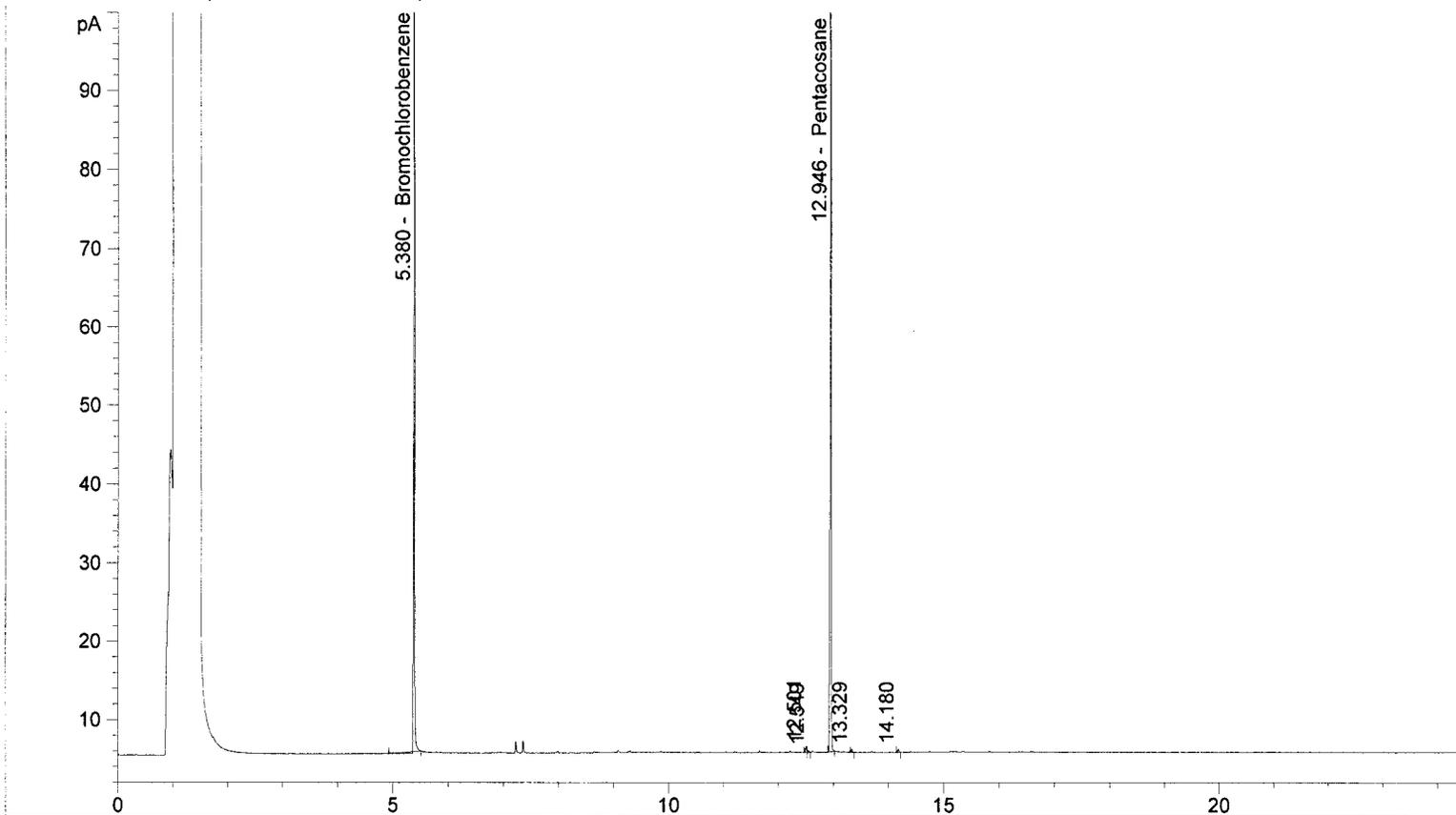
0 < 310 µg/L

03.27.15ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\017F2701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 3/26/2015 9:45:50 PM 3/26/2015 9:45:50 PM
 Report Creation: 3/27/2015 10:50:13 AM

Sample Name: EV15030143-06 10 ML

FID1 A, (81503261\017F2701.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	126.482	21.882
12.946		Pentacosane	146.526	7.439

88/
747

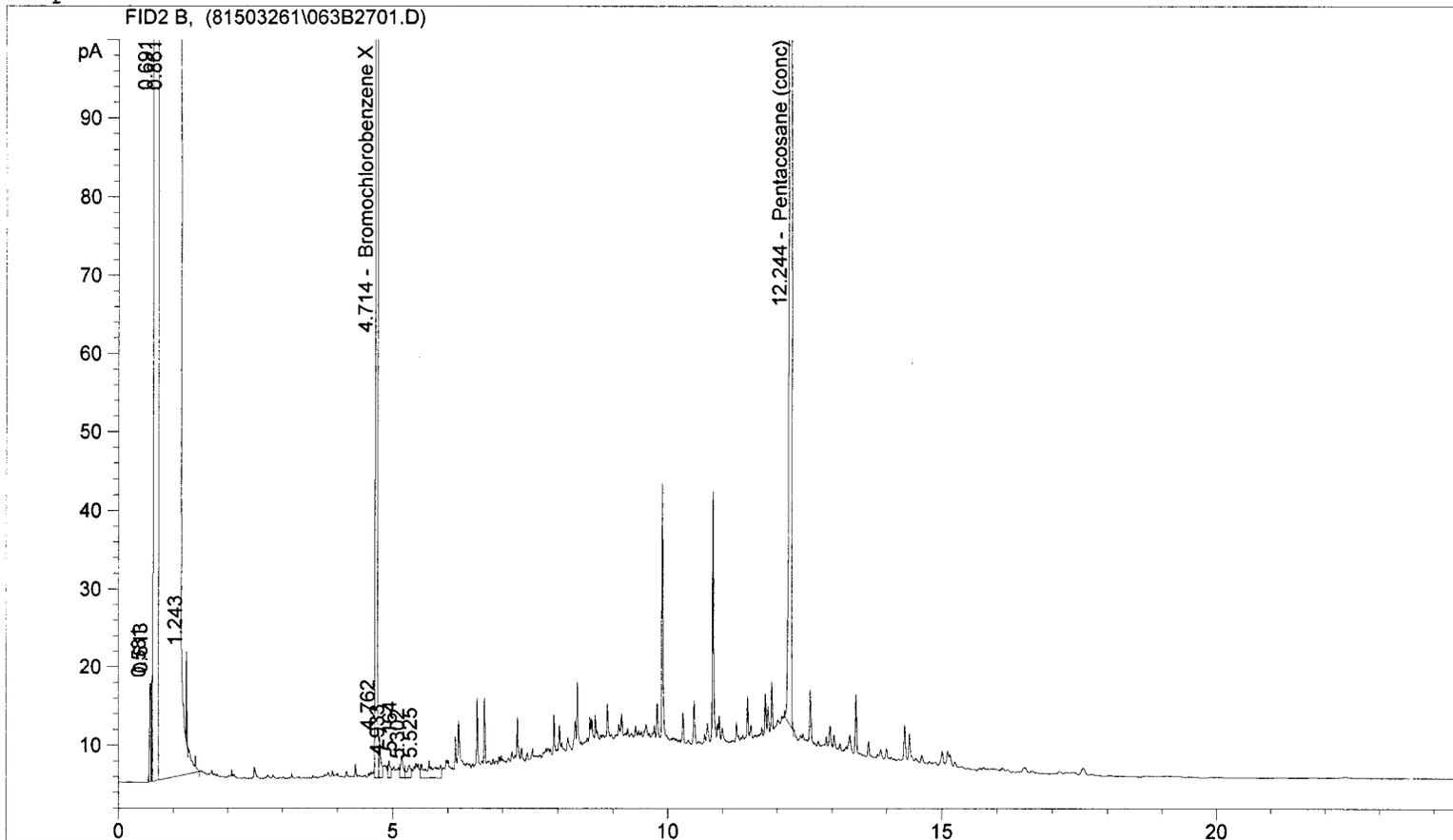
G < 130 µg/L
D < 310 µg/L

R. BY *MS*
4/6/15

03.27.15

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\063B2701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/26/2015 9:45:50 PM 3/26/2015 9:45:50 PM
 Report Creation: 3/27/2015 8:44:04 AM

Sample Name: EV15030143-06 1 ML ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.714	FID2 B,	Bromochlorobenzene X	2428.446	189.079
12.244		Pentacosane (conc)	2586.532	67.132

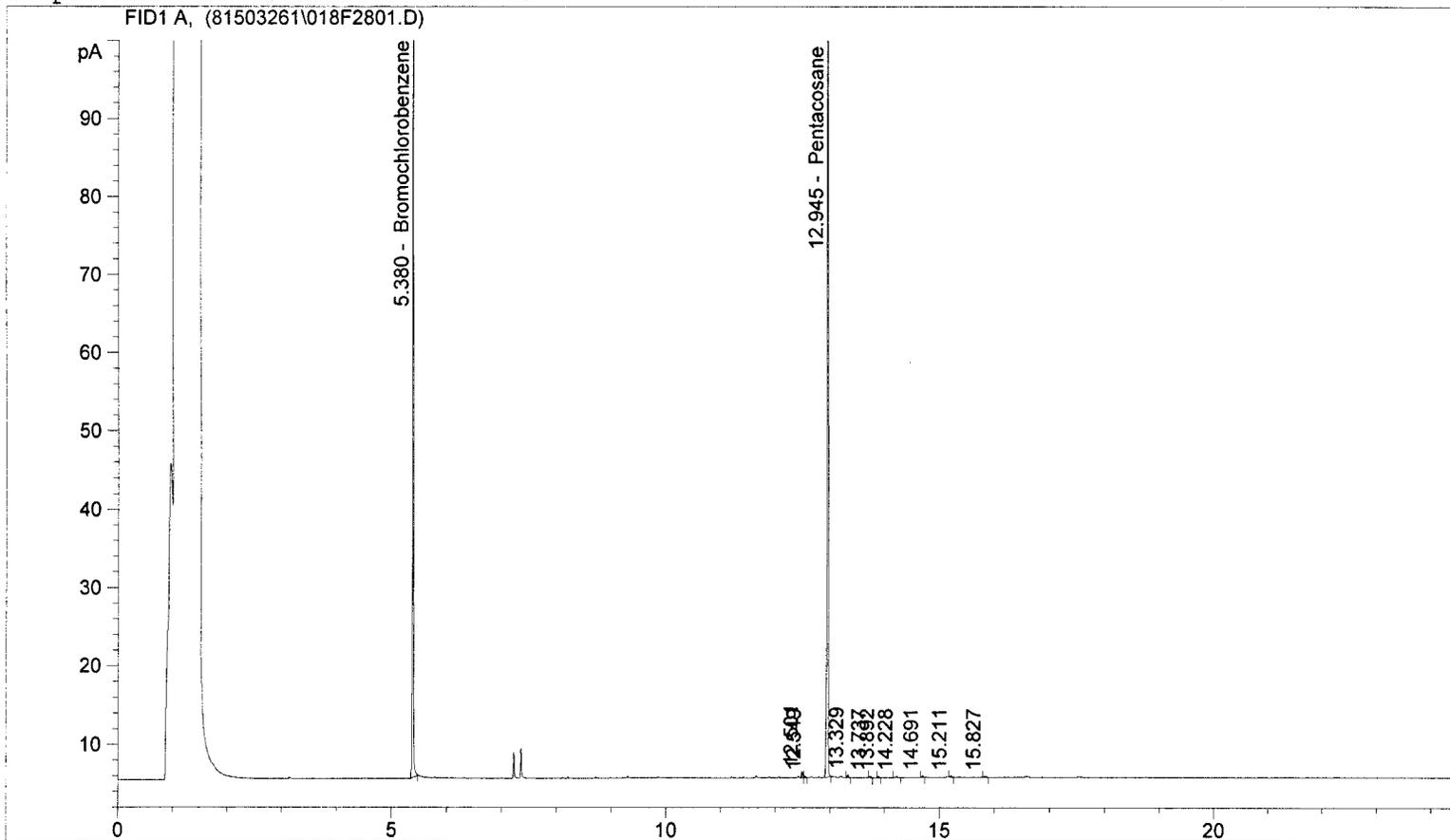
67%

0 < 310 µg/L

03-27-15

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\018F2801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 3/26/2015 10:20:31 PM 3/26/2015 10:20:31 PM
 Report Creation: 3/27/2015 8:40:04 AM

Sample Name: EV15030143-08 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	139.163	24.076
12.945		Pentacosane	155.351	7.887

96%
79%

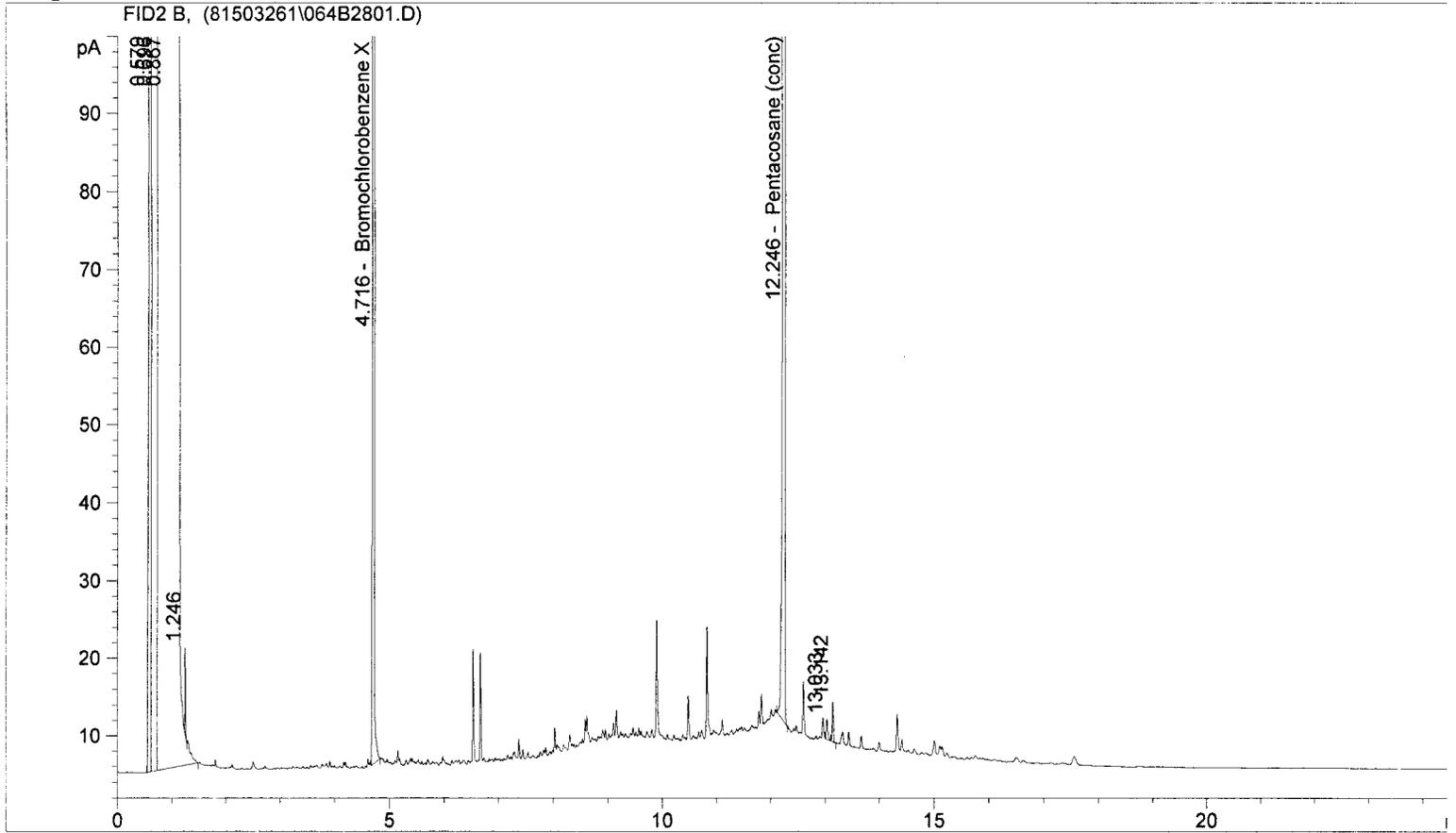
G < 130 µg/L
 D < 310 µg/L

RL BY NB
 4/6/15

03.27.15 EB

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\064B2801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/26/2015 10:20:31 PM 3/26/2015 10:20:31 PM
 Report Creation: 3/27/2015 8:44:19 AM

Sample Name: EV15030143-08 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.716	FID2 B,	Bromochlorobenzene X	2704.622	210.582
12.246		Pentacosane (conc)	2887.481	74.943

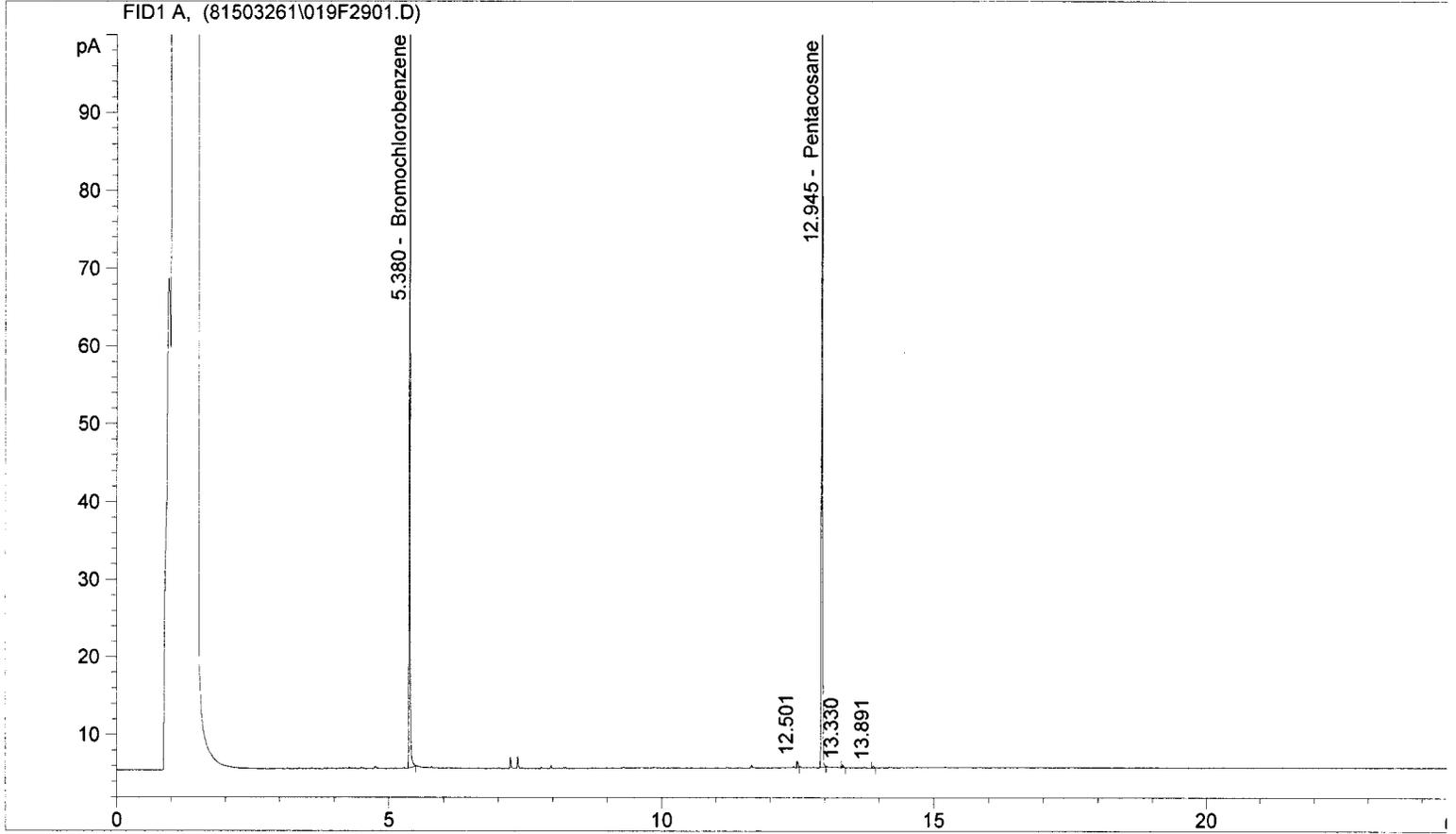
75%

0 < 310 µg/L

03.27.15

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\019F2901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 3/26/2015 10:55:05 PM 3/26/2015 10:55:05 PM
 Report Creation: 3/27/2015 10:49:29 AM

Sample Name: EV15030143-09 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	129.113	22.337
12.945		Pentacosane	139.892	7.102

89%
71%

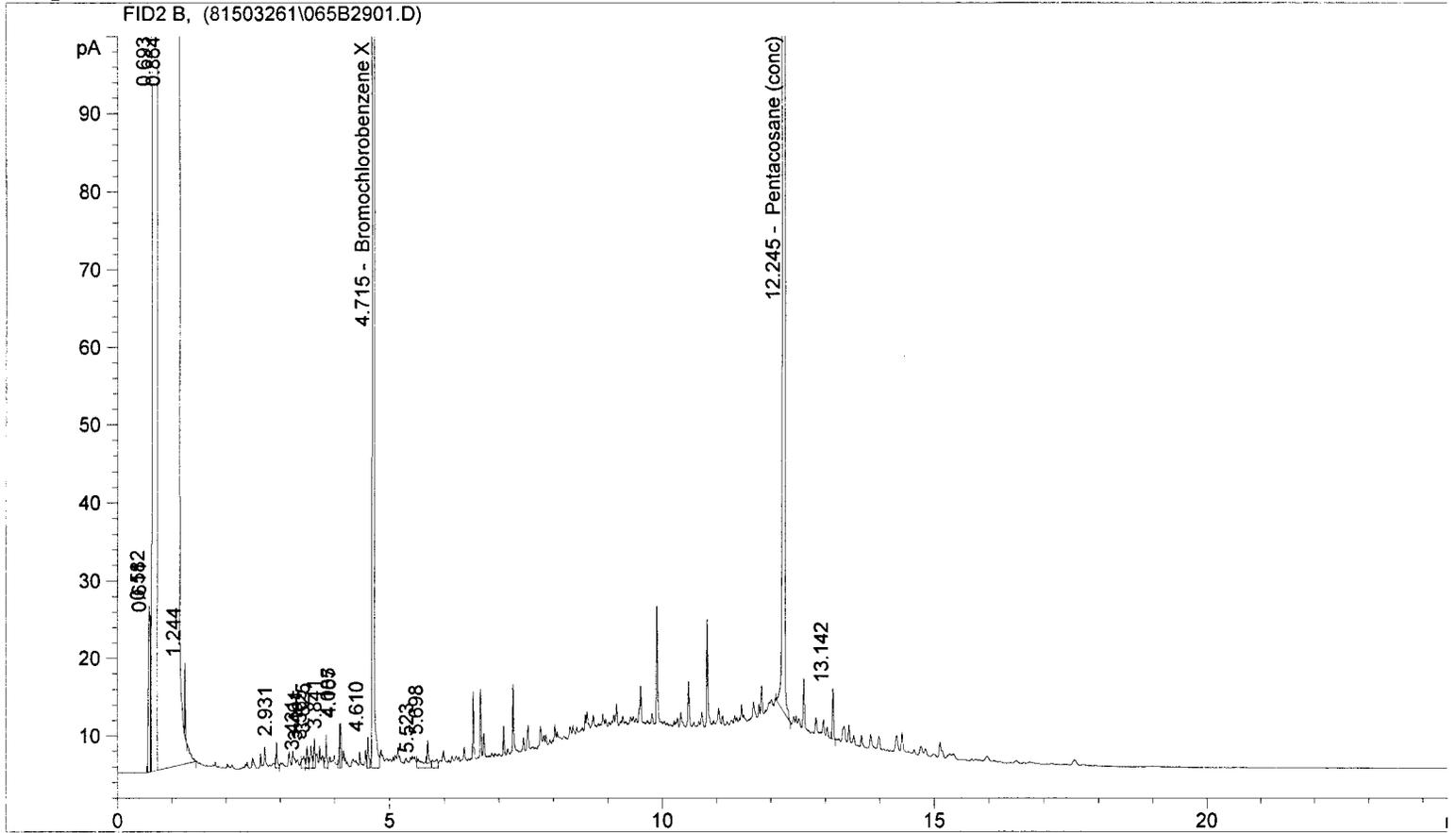
G < 130 µg/L
 D < 310 µg/L

R. BY *MS*
 .. 4/6/15

03-27-15 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\065B2901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/26/2015 10:55:05 PM 3/26/2015 10:55:05 PM
 Report Creation: 3/27/2015 8:44:46 AM

Sample Name: EV15030143-09 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.715	FID2 B,	Bromochlorobenzene X	2587.194	201.439
12.245		Pentacosane (conc)	2653.961	68.882

69%

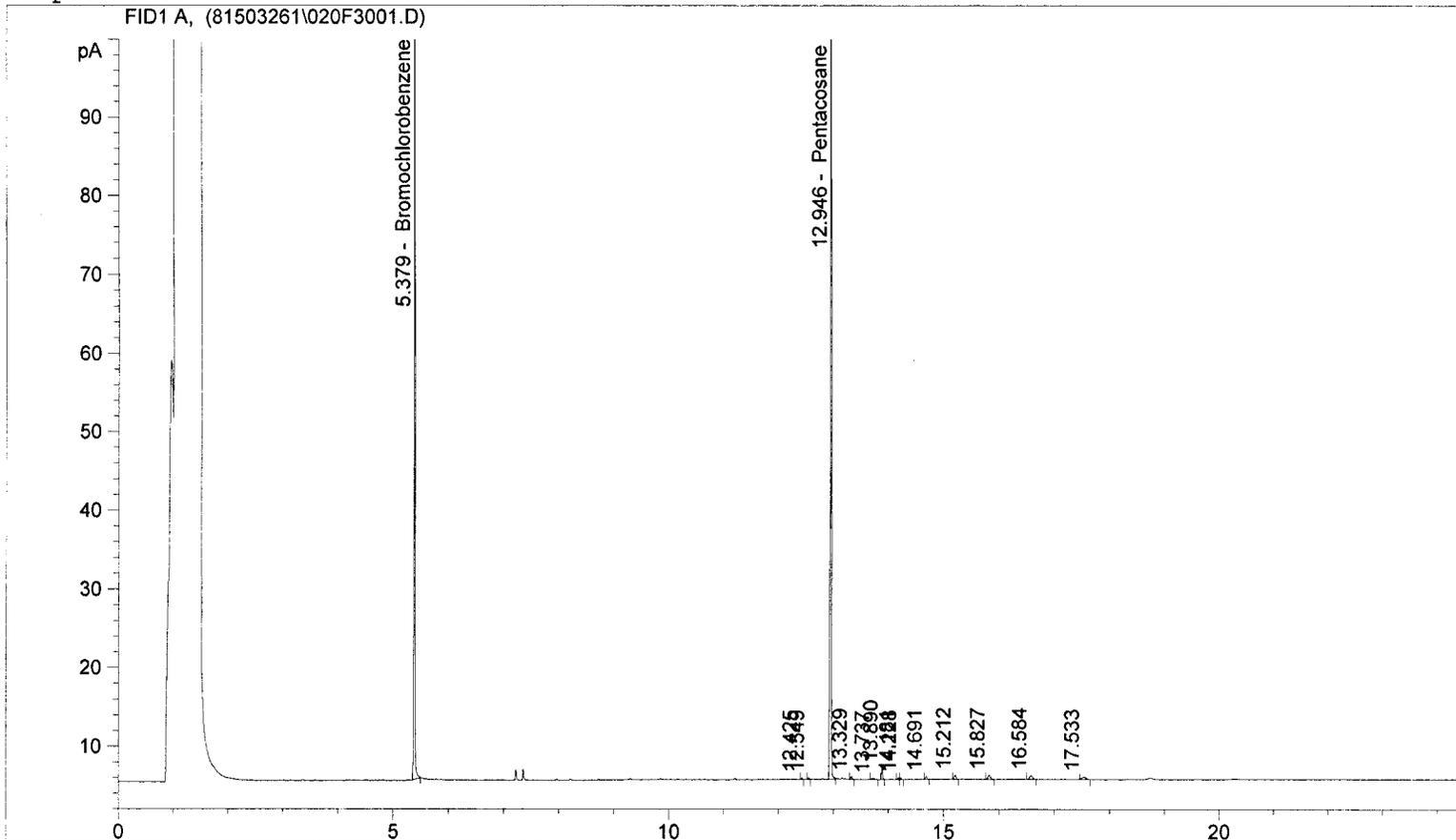
$0 < 310 \mu\text{g/L}$

03.27.15 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503261\020F3001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 3/26/2015 11:29:36 PM 3/26/2015 11:29:36 PM
 Report Creation: 3/27/2015 8:42:46 AM

Sample Name: EV15030143-10 10 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.379	FID1 A,	Bromochlorobenzene	138.428	23.949 <i>961.</i>
12.946		Pentacosane	143.786	7.300 <i>737.</i>

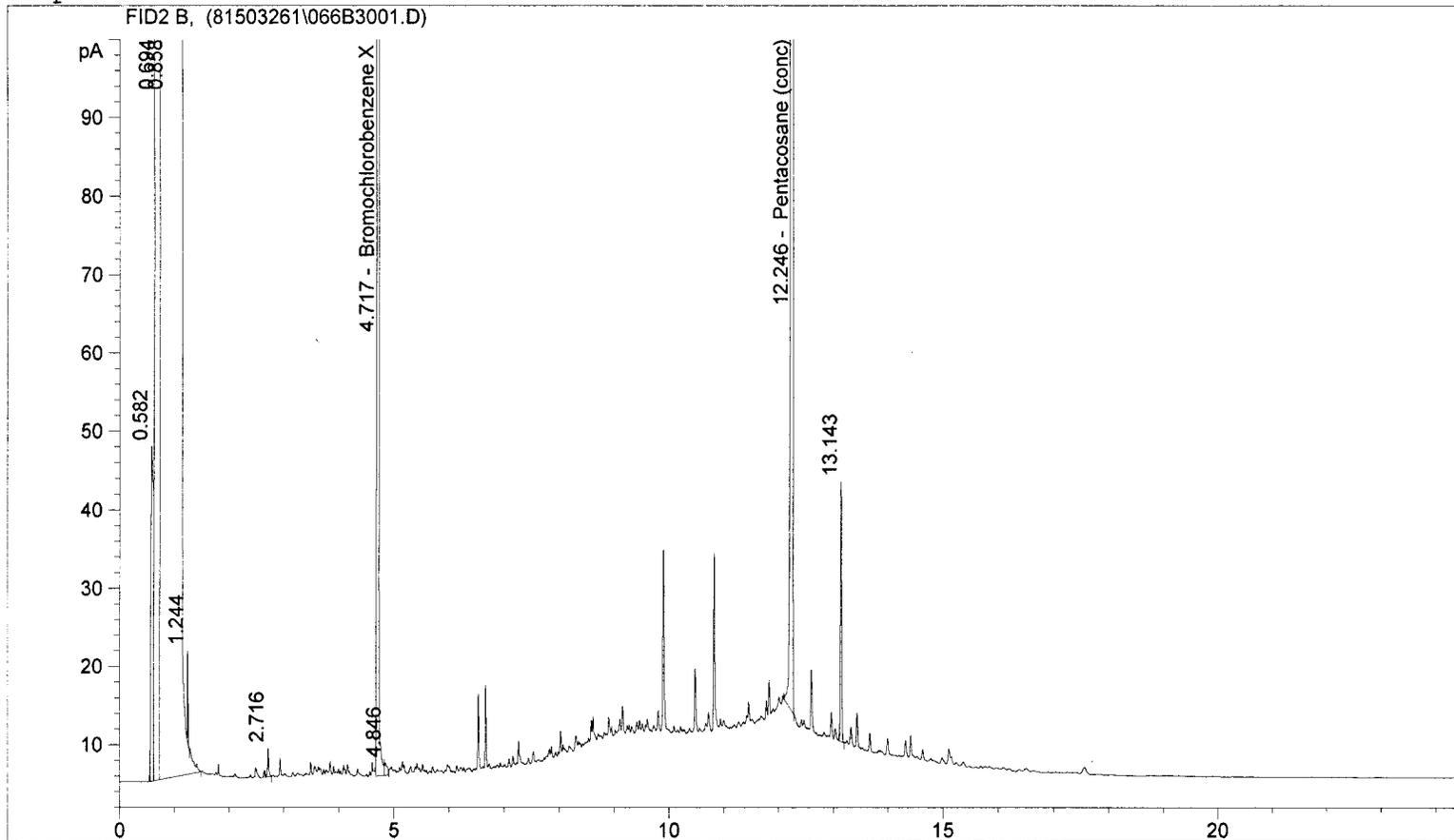
G < 130 ug/L
D < 310 ug/L

BY *MS*
 4/6/15

03.27.15 *ES*

Sample Name: EV15030143-10 1 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.717	FID2 B,	Bromochlorobenzene X	2895.174	225.418
12.246		Pentacosane (conc)	2864.660	74.351

74%

0 < 310 µg/L

03-27-15 EJ



May 21, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On March 27th, 8 samples were received by our laboratory and assigned our laboratory project number EV15030154. The project was identified as your Closed City of Yakima Landfill / #1148008.030.032. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report is being re-issued to include:
Batch R253804 Blank Spike PCB-1260 result qualifier.
EV15030154-01, -02, -03 Pesticide sample qualifiers.
Chromatogram for EV15030154-07.

Please note that EV15030154-01, -02, -03 Pesticide samples were extracted outside of hold time due to shipping delays outside of the control of the laboratory.

No other abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-01
CLIENT SAMPLE ID	FPP-MW-3-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 9:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/27/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/27/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	04/02/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	04/02/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	04/02/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	04/02/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	04/02/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	04/02/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	04/02/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	04/02/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	04/02/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	04/02/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	04/02/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-01
CLIENT SAMPLE ID	FPP-MW-3-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 9:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	04/02/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	04/02/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	04/02/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	04/02/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	04/02/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	04/02/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Naphthalene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	ug/L	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-01
CLIENT SAMPLE ID	FPP-MW-3-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 9:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	04/01/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	04/01/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	ug/L	04/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	ug/L	04/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	04/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	04/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	04/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	04/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	04/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	04/01/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-01
CLIENT SAMPLE ID	FPP-MW-3-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 9:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/27/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
A-BHC	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
G-BHC	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
B-BHC	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Heptachlor	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
D-BHC	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Aldrin	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-01
CLIENT SAMPLE ID	FPP-MW-3-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 9:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Chlordane	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endosulfan I	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
4,4'-DDE	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Dieldrin	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endrin	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
4,4'-DDD	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endosulfan II	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
4,4'-DDT	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endrin Aldehyde	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endosulfan Sulfate	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Methoxychlor	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Hexachlorobenzene	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Toxaphene	EPA-8081	ND- H2	0.50	1	ug/L	04/08/2015	CAS
Total Dissolved Solids	SM2540C	140	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	9.2	0.092	1	MG/L	03/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/27/2015	DNT
Sulfate	EPA-300.0	5.1	0.26	1	MG/L	03/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	04/03/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	04/03/2015	RAL
Arsenic	EPA-200.8	1.0	0.45	1	ug/L	03/31/2015	RAL
Barium	EPA-200.8	17	1.0	1	ug/L	03/31/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium	EPA-200.8	20000	100	1	ug/L	03/31/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron	EPA-200.8	6800	50	1	ug/L	03/31/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium	EPA-200.8	8100	50	1	ug/L	03/31/2015	RAL
Manganese	EPA-200.8	320	2.0	1	ug/L	03/31/2015	RAL
Potassium	EPA-200.8	3100	50	1	ug/L	03/31/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium	EPA-200.8	13000	50	1	ug/L	03/31/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	03/31/2015	RAL
Barium (Dissolved)	EPA-200.8	16	1.0	1	ug/L	03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-01
CLIENT SAMPLE ID	FPP-MW-3-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 9:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium (Dissolved)	EPA-200.8	20000	100	1	ug/L	03/31/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron (Dissolved)	EPA-200.8	6500	50	1	ug/L	03/31/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium (Dissolved)	EPA-200.8	7800	50	1	ug/L	03/31/2015	RAL
Manganese (Dissolved)	EPA-200.8	320	2.0	1	ug/L	03/31/2015	RAL
Potassium (Dissolved)	EPA-200.8	3100	50	1	ug/L	03/31/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium (Dissolved)	EPA-200.8	13000	50	1	ug/L	03/31/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	100	0.0	1	MG/L	04/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	100	0.0	1	MG/L	04/07/2015	CAS
Ammonia as N	EPA-350.1	0.21	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.2	0.50	1	MG/L	04/09/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	101	03/27/2015	EBS
C25	NWTPH-HCID	79.7	03/27/2015	EBS
C25 (conc)	NWTPH-HCID	71.4	03/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	97.1	04/02/2015	DLC
Toluene-d8	EPA-8260	99.0	04/02/2015	DLC
4-Bromofluorobenzene	EPA-8260	104	04/02/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	76.7	04/01/2015	GAP
Terphenyl-d14	EPA-8270 SIM	107	04/01/2015	GAP
2-Fluorophenol	EPA-8270	52.7	03/30/2015	GAP
Phenol-d5	EPA-8270	32.6	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	97.6	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	94.2	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	123 GS1	03/30/2015	GAP
Terphenyl-d14	EPA-8270	104	03/30/2015	GAP
DCB	EPA-8082	104	04/27/2015	CAS
TCMX	EPA-8081	78.0 H2	04/08/2015	CAS
DCB	EPA-8081	95.0 H2	04/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-01
		DATE RECEIVED:	03/27/2015
CLIENT SAMPLE ID	FPP-MW-3-032615	COLLECTION DATE:	3/26/2015 9:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

GS1 - Surrogate outside of control limits due to matrix effect.
H2 - Sample extracted or prepared outside of hold time.
U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-02
CLIENT SAMPLE ID	MW-11-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/27/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/27/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	04/02/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	04/02/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	04/02/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	04/02/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	04/02/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	04/02/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	04/02/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	04/02/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	04/02/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	04/02/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	04/02/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-02
CLIENT SAMPLE ID	MW-11-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	04/02/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	04/02/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	04/02/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	04/02/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	04/02/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	04/02/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-02
CLIENT SAMPLE ID	MW-11-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	04/01/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	04/01/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	04/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	04/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	04/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	04/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	04/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	04/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	04/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	04/01/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-02
CLIENT SAMPLE ID	MW-11-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/27/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
A-BHC	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
G-BHC	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
B-BHC	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Heptachlor	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
D-BHC	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Aldrin	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-02
CLIENT SAMPLE ID	MW-11-032615	DATE RECEIVED:	03/27/2015
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Chlordane	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endosulfan I	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
4,4'-DDE	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Dieldrin	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endrin	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
4,4'-DDD	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endosulfan II	EPA-8081	0.011 H2	0.010	1	ug/L	04/08/2015	CAS
4,4'-DDT	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endrin Aldehyde	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endosulfan Sulfate	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Methoxychlor	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Hexachlorobenzene	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Toxaphene	EPA-8081	ND- H2	0.50	1	ug/L	04/08/2015	CAS
Total Dissolved Solids	SM2540C	220	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	20	0.092	1	MG/L	03/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/27/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	04/03/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	04/03/2015	RAL
Arsenic	EPA-200.8	4.6	0.45	1	ug/L	03/31/2015	RAL
Barium	EPA-200.8	49	1.0	1	ug/L	03/31/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium	EPA-200.8	35000	100	1	ug/L	03/31/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron	EPA-200.8	29000	50	1	ug/L	03/31/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium	EPA-200.8	12000	50	1	ug/L	03/31/2015	RAL
Manganese	EPA-200.8	1700	2.0	1	ug/L	03/31/2015	RAL
Potassium	EPA-200.8	5600	50	1	ug/L	03/31/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium	EPA-200.8	18000	50	1	ug/L	03/31/2015	RAL
Arsenic (Dissolved)	EPA-200.8	3.7	0.45	1	ug/L	03/31/2015	RAL
Barium (Dissolved)	EPA-200.8	49	1.0	1	ug/L	03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-02
CLIENT SAMPLE ID	MW-11-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium (Dissolved)	EPA-200.8	35000	100	1	ug/L	03/31/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron (Dissolved)	EPA-200.8	29000	50	1	ug/L	03/31/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	ug/L	03/31/2015	RAL
Manganese (Dissolved)	EPA-200.8	1700	2.0	1	ug/L	03/31/2015	RAL
Potassium (Dissolved)	EPA-200.8	5600	50	1	ug/L	03/31/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium (Dissolved)	EPA-200.8	18000	50	1	ug/L	03/31/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	170	0.0	1	MG/L	04/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	170	0.0	1	MG/L	04/07/2015	CAS
Ammonia as N	EPA-350.1	0.97	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.1	0.50	1	MG/L	04/09/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	84.8	03/27/2015	EBS
C25	NWTPH-HCID	69.1	03/27/2015	EBS
C25 (conc)	NWTPH-HCID	77.3	03/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	96.2	04/02/2015	DLC
Toluene-d8	EPA-8260	99.0	04/02/2015	DLC
4-Bromofluorobenzene	EPA-8260	103	04/02/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	72.2	04/01/2015	GAP
Terphenyl-d14	EPA-8270 SIM	102	04/01/2015	GAP
2-Fluorophenol	EPA-8270	48.4	03/30/2015	GAP
Phenol-d5	EPA-8270	28.9	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	87.8	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	83.3	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	116	03/30/2015	GAP
Terphenyl-d14	EPA-8270	107	03/30/2015	GAP
DCB	EPA-8082	106	04/27/2015	CAS
TCMX	EPA-8081	71.0 H2	04/08/2015	CAS
DCB	EPA-8081	89.0 H2	04/08/2015	CAS

H2 - Sample extracted or prepared outside of hold time.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-03
CLIENT SAMPLE ID	MW-18-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 11:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/27/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/27/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	04/03/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	04/03/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	04/03/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	04/03/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	04/03/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	04/03/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	04/03/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	04/03/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	04/03/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	04/03/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	04/03/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-03
		DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 11:55:00 AM
CLIENT SAMPLE ID	MW-18-032615	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	04/03/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	04/03/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	04/03/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	04/03/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	04/03/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	04/03/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Naphthalene	EPA-8270 SIM	0.014	0.013	1	ug/L	04/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-03
CLIENT SAMPLE ID	MW-18-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 11:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	04/01/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	04/01/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	04/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	04/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	04/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	04/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	04/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	04/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	04/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	04/01/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-03
CLIENT SAMPLE ID	MW-18-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 11:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/27/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
A-BHC	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
G-BHC	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
B-BHC	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Heptachlor	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
D-BHC	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Aldrin	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-03
CLIENT SAMPLE ID	MW-18-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 11:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Chlordane	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endosulfan I	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
4,4'-DDE	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Dieldrin	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endrin	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
4,4'-DDD	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endosulfan II	EPA-8081	0.016 H2	0.010	1	ug/L	04/08/2015	CAS
4,4'-DDT	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endrin Aldehyde	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Endosulfan Sulfate	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Methoxychlor	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Hexachlorobenzene	EPA-8081	ND- H2	0.010	1	ug/L	04/08/2015	CAS
Toxaphene	EPA-8081	ND- H2	0.50	1	ug/L	04/08/2015	CAS
Total Dissolved Solids	SM2540C	260	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	19	0.092	1	MG/L	03/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/27/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	04/03/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	04/03/2015	RAL
Arsenic	EPA-200.8	6.8	0.45	1	ug/L	03/31/2015	RAL
Barium	EPA-200.8	39	1.0	1	ug/L	03/31/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium	EPA-200.8	45000	100	1	ug/L	03/31/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron	EPA-200.8	39000	50	1	ug/L	03/31/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium	EPA-200.8	17000	50	1	ug/L	03/31/2015	RAL
Manganese	EPA-200.8	3500	2.0	1	ug/L	03/31/2015	RAL
Potassium	EPA-200.8	3700	50	1	ug/L	03/31/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium	EPA-200.8	15000	50	1	ug/L	03/31/2015	RAL
Arsenic (Dissolved)	EPA-200.8	6.8	0.45	1	ug/L	03/31/2015	RAL
Barium (Dissolved)	EPA-200.8	38	1.0	1	ug/L	03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-03
CLIENT SAMPLE ID	MW-18-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 11:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium (Dissolved)	EPA-200.8	44000	100	1	ug/L	03/31/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron (Dissolved)	EPA-200.8	38000	50	1	ug/L	03/31/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium (Dissolved)	EPA-200.8	17000	50	1	ug/L	03/31/2015	RAL
Manganese (Dissolved)	EPA-200.8	3400	2.0	1	ug/L	03/31/2015	RAL
Potassium (Dissolved)	EPA-200.8	3700	50	1	ug/L	03/31/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium (Dissolved)	EPA-200.8	15000	50	1	ug/L	03/31/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	210	0.0	1	MG/L	04/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	210	0.0	1	MG/L	04/07/2015	CAS
Ammonia as N	EPA-350.1	0.53	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	6.0	0.50	1	MG/L	04/09/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	90.4	03/27/2015	EBS
C25	NWTPH-HCID	73.7	03/27/2015	EBS
C25 (conc)	NWTPH-HCID	80.1	03/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	109	04/03/2015	DLC
Toluene-d8	EPA-8260	105	04/03/2015	DLC
4-Bromofluorobenzene	EPA-8260	110	04/03/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	77.3	04/01/2015	GAP
Terphenyl-d14	EPA-8270 SIM	99.7	04/01/2015	GAP
2-Fluorophenol	EPA-8270	49.8	03/30/2015	GAP
Phenol-d5	EPA-8270	30.5	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	93.0	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	90.7	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	122 GS1	03/30/2015	GAP
Terphenyl-d14	EPA-8270	101	03/30/2015	GAP
DCB	EPA-8082	107	04/27/2015	CAS
TCMX	EPA-8081	65.0 H2	04/08/2015	CAS
DCB	EPA-8081	83.0 H2	04/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-03
		DATE RECEIVED:	03/27/2015
CLIENT SAMPLE ID	MW-18-032615	COLLECTION DATE:	3/26/2015 11:55:00 AM
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SAMPLE DATA RESULTS

GS1 - Surrogate outside of control limits due to matrix effect.
H2 - Sample extracted or prepared outside of hold time.
U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-04
CLIENT SAMPLE ID	MW-107-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 1:14:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/27/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/27/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	04/03/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	04/03/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	04/03/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	04/03/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	04/03/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	04/03/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	04/03/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	04/03/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	04/03/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	04/03/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	04/03/2015	DLC



CERTIFICATE OF ANALYSIS

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CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-04
CLIENT SAMPLE ID	MW-107-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 1:14:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	04/03/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	04/03/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	04/03/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	04/03/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	04/03/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	04/03/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Naphthalene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Fluorene	EPA-8270 SIM	0.017	0.0092	1	ug/L	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-04
CLIENT SAMPLE ID	MW-107-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 1:14:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	04/01/2015	GAP
Phenanthrene	EPA-8270 SIM	0.015	0.014	1	ug/L	04/01/2015	GAP
Anthracene	EPA-8270 SIM	0.016	0.01	1	ug/L	04/01/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	ug/L	04/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	ug/L	04/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	04/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	04/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	04/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	04/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	04/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	04/01/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-04
CLIENT SAMPLE ID	MW-107-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 1:14:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/27/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1242	EPA-8082	0.0092	0.0050	1	ug/L	04/27/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-04
CLIENT SAMPLE ID	MW-107-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 1:14:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan II	EPA-8081	0.026	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	04/06/2015	CAS
Total Dissolved Solids	SM2540C	220	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	19	0.092	1	MG/L	03/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/27/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	04/03/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	04/03/2015	RAL
Arsenic	EPA-200.8	2.5	0.45	1	ug/L	03/31/2015	RAL
Barium	EPA-200.8	62	1.0	1	ug/L	03/31/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium	EPA-200.8	39000	100	1	ug/L	03/31/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron	EPA-200.8	24000	50	1	ug/L	03/31/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium	EPA-200.8	13000	50	1	ug/L	03/31/2015	RAL
Manganese	EPA-200.8	2000	2.0	1	ug/L	03/31/2015	RAL
Potassium	EPA-200.8	7400	50	1	ug/L	03/31/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium	EPA-200.8	21000	50	1	ug/L	03/31/2015	RAL
Arsenic (Dissolved)	EPA-200.8	3.3	0.45	1	ug/L	03/31/2015	RAL
Barium (Dissolved)	EPA-200.8	60	1.0	1	ug/L	03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-04
CLIENT SAMPLE ID	MW-107-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 1:14:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium (Dissolved)	EPA-200.8	39000	100	1	ug/L	03/31/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron (Dissolved)	EPA-200.8	24000	50	1	ug/L	03/31/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	ug/L	03/31/2015	RAL
Manganese (Dissolved)	EPA-200.8	1900	2.0	1	ug/L	03/31/2015	RAL
Potassium (Dissolved)	EPA-200.8	7400	50	1	ug/L	03/31/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium (Dissolved)	EPA-200.8	21000	50	1	ug/L	03/31/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	200	0.0	1	MG/L	04/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	200	0.0	1	MG/L	04/07/2015	CAS
Ammonia as N	EPA-350.1	3.6	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.1	0.50	1	MG/L	04/09/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	99.6	03/27/2015	EBS
C25	NWTPH-HCID	79.8	03/27/2015	EBS
C25 (conc)	NWTPH-HCID	69.9	03/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	97.9	04/03/2015	DLC
Toluene-d8	EPA-8260	101	04/03/2015	DLC
4-Bromofluorobenzene	EPA-8260	102	04/03/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	79.6	04/01/2015	GAP
Terphenyl-d14	EPA-8270 SIM	104	04/01/2015	GAP
2-Fluorophenol	EPA-8270	51.4	03/30/2015	GAP
Phenol-d5	EPA-8270	31.9	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	95.8	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	90.7	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	127 GS1	03/30/2015	GAP
Terphenyl-d14	EPA-8270	106	03/30/2015	GAP
DCB	EPA-8082	102	04/27/2015	CAS
TCMX	EPA-8081	70.0	04/06/2015	CAS
DCB	EPA-8081	83.0	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
 GS1 - Surrogate outside of control limits due to matrix effect.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-05
		DATE RECEIVED:	03/27/2015
CLIENT SAMPLE ID	DUP-2-032615	COLLECTION DATE:	3/26/2015 1:52:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/27/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/27/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	04/03/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	04/03/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	04/03/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	04/03/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	04/03/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	04/03/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	04/03/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	04/03/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	04/03/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	04/03/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	04/03/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-05
		DATE RECEIVED:	03/27/2015
CLIENT SAMPLE ID	DUP-2-032615	COLLECTION DATE:	3/26/2015 1:52:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	04/03/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	04/03/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	04/03/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	04/03/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	04/03/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	04/03/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Naphthalene	EPA-8270 SIM	0.089	0.014	1	ug/L	04/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	ug/L	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-05
CLIENT SAMPLE ID	DUP-2-032615	DATE RECEIVED:	03/27/2015
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		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	04/01/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	04/01/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	ug/L	04/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	ug/L	04/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	04/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	04/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	04/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	04/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	04/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	04/01/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-05
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		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/27/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-05
		DATE RECEIVED:	03/27/2015
CLIENT SAMPLE ID	DUP-2-032615	COLLECTION DATE:	3/26/2015 1:52:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	04/06/2015	CAS
Total Dissolved Solids	SM2540C	130	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	9.2	0.092	1	MG/L	03/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/27/2015	DNT
Sulfate	EPA-300.0	4.8	0.26	1	MG/L	03/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	04/03/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	04/03/2015	RAL
Arsenic	EPA-200.8	U	0.45	1	ug/L	03/31/2015	RAL
Barium	EPA-200.8	17	1.0	1	ug/L	03/31/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium	EPA-200.8	20000	100	1	ug/L	03/31/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron	EPA-200.8	6700	50	1	ug/L	03/31/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium	EPA-200.8	7900	50	1	ug/L	03/31/2015	RAL
Manganese	EPA-200.8	320	2.0	1	ug/L	03/31/2015	RAL
Potassium	EPA-200.8	3100	50	1	ug/L	03/31/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium	EPA-200.8	13000	50	1	ug/L	03/31/2015	RAL
Arsenic (Dissolved)	EPA-200.8	1.0	0.45	1	ug/L	03/31/2015	RAL
Barium (Dissolved)	EPA-200.8	16	1.0	1	ug/L	03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-05
CLIENT SAMPLE ID	DUP-2-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 1:52:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium (Dissolved)	EPA-200.8	20000	100	1	ug/L	03/31/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron (Dissolved)	EPA-200.8	6600	50	1	ug/L	03/31/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium (Dissolved)	EPA-200.8	7800	50	1	ug/L	03/31/2015	RAL
Manganese (Dissolved)	EPA-200.8	320	2.0	1	ug/L	03/31/2015	RAL
Potassium (Dissolved)	EPA-200.8	3100	50	1	ug/L	03/31/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium (Dissolved)	EPA-200.8	13000	50	1	ug/L	03/31/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	100	0.0	1	MG/L	04/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	100	0.0	1	MG/L	04/02/2015	CAS
Ammonia as N	EPA-350.1	0.20	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.3	0.50	1	MG/L	04/09/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	91.4	03/27/2015	EBS
C25	NWTPH-HCID	73.6	03/27/2015	EBS
C25 (conc)	NWTPH-HCID	76.8	03/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	97.2	04/03/2015	DLC
Toluene-d8	EPA-8260	99.3	04/03/2015	DLC
4-Bromofluorobenzene	EPA-8260	103	04/03/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	77.4	04/01/2015	GAP
Terphenyl-d14	EPA-8270 SIM	113	04/01/2015	GAP
2-Fluorophenol	EPA-8270	53.4	03/30/2015	GAP
Phenol-d5	EPA-8270	32.6	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	96.7	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	93.4	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	124 GS1	03/30/2015	GAP
Terphenyl-d14	EPA-8270	111	03/30/2015	GAP
DCB	EPA-8082	96.0	04/27/2015	CAS
TCMX	EPA-8081	71.0	04/06/2015	CAS
DCB	EPA-8081	80.0	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
 GS1 - Surrogate outside of control limits due to matrix effect.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-06
CLIENT SAMPLE ID	MW-102-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/27/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/27/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	04/03/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	04/03/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	04/03/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	04/03/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	04/03/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	04/03/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	04/03/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	04/03/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	04/03/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	04/03/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	04/03/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-06
		DATE RECEIVED:	03/27/2015
CLIENT SAMPLE ID	MW-102-032615	COLLECTION DATE:	3/26/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	04/03/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	04/03/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	04/03/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	04/03/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	04/03/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	04/03/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Naphthalene	EPA-8270 SIM	0.015	0.013	1	ug/L	04/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	0.061	0.020	1	ug/L	04/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	0.038	0.020	1	ug/L	04/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-06
CLIENT SAMPLE ID	MW-102-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	04/01/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	04/01/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	04/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	04/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	04/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	04/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	04/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	04/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	04/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	04/01/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-06
CLIENT SAMPLE ID	MW-102-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
PCB-1016	EPA-8082	U	0.0051	1	ug/L	04/27/2015	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	04/27/2015	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	04/27/2015	CAS
PCB-1242	EPA-8082	U	0.0051	1	ug/L	04/27/2015	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	04/27/2015	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	04/27/2015	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	04/27/2015	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-06
CLIENT SAMPLE ID	MW-102-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Endosulfan II	EPA-8081	0.019	0.011	1	ug/L	04/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Toxaphene	EPA-8081	U	0.51	1	ug/L	04/06/2015	CAS
Total Dissolved Solids	SM2540C	170	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	13	0.092	1	MG/L	03/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/27/2015	DNT
Sulfate	EPA-300.0	9.0	0.26	1	MG/L	03/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	04/03/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	04/03/2015	RAL
Arsenic	EPA-200.8	U	0.45	1	ug/L	03/31/2015	RAL
Barium	EPA-200.8	32	1.0	1	ug/L	03/31/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium	EPA-200.8	27000	100	1	ug/L	03/31/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron	EPA-200.8	6800	50	1	ug/L	03/31/2015	RAL
Lead	EPA-200.8	0.46	0.28	1	ug/L	03/31/2015	RAL
Magnesium	EPA-200.8	11000	50	1	ug/L	03/31/2015	RAL
Manganese	EPA-200.8	850	2.0	1	ug/L	03/31/2015	RAL
Potassium	EPA-200.8	4700	50	1	ug/L	03/31/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium	EPA-200.8	16000	50	1	ug/L	03/31/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	03/31/2015	RAL
Barium (Dissolved)	EPA-200.8	31	1.0	1	ug/L	03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-06
CLIENT SAMPLE ID	MW-102-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium (Dissolved)	EPA-200.8	28000	100	1	ug/L	03/31/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron (Dissolved)	EPA-200.8	6400	50	1	ug/L	03/31/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium (Dissolved)	EPA-200.8	11000	50	1	ug/L	03/31/2015	RAL
Manganese (Dissolved)	EPA-200.8	860	2.0	1	ug/L	03/31/2015	RAL
Potassium (Dissolved)	EPA-200.8	4900	50	1	ug/L	03/31/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium (Dissolved)	EPA-200.8	16000	50	1	ug/L	03/31/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	150	0.0	1	MG/L	04/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	150	0.0	1	MG/L	04/02/2015	CAS
Ammonia as N	EPA-350.1	2.4	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	2.0	0.50	1	MG/L	04/09/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	90.2	03/27/2015	EBS
C25	NWTPH-HCID	74.0	03/27/2015	EBS
C25 (conc)	NWTPH-HCID	81.6	03/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	97.6	04/03/2015	DLC
Toluene-d8	EPA-8260	99.0	04/03/2015	DLC
4-Bromofluorobenzene	EPA-8260	103	04/03/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	77.6	04/01/2015	GAP
Terphenyl-d14	EPA-8270 SIM	111	04/01/2015	GAP
2-Fluorophenol	EPA-8270	54.1	03/30/2015	GAP
Phenol-d5	EPA-8270	32.9	03/30/2015	GAP
Nitrobenzene-d5	EPA-8270	96.6	03/30/2015	GAP
2-Fluorobiphenyl	EPA-8270	92.7	03/30/2015	GAP
2,4,6-Tribromophenol	EPA-8270	124 GS1	03/30/2015	GAP
Terphenyl-d14	EPA-8270	109	03/30/2015	GAP
DCB	EPA-8082	99.0	04/27/2015	CAS
TCMX	EPA-8081	70.0	04/06/2015	CAS
DCB	EPA-8081	82.0	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
 GS1 - Surrogate outside of control limits due to matrix effect.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-07
CLIENT SAMPLE ID	FPP-MW-2-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 12:37:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	220	130	1	ug/L	03/30/2015	EBS
TPH-Diesel Range	NWTPH-DX	940	130	1	ug/L	03/30/2015	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	570	250	1	ug/L	03/30/2015	EBS
TPH-Oil Range	NWTPH-DX	790	250	1	ug/L	03/30/2015	EBS
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	03/31/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	0.012	0.01	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	0.014	0.01	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	0.011	0.0068	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Total Dissolved Solids	SM2540C	280	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	15	0.092	1	MG/L	03/27/2015	DNT
Fluoride	EPA-300.0	0.26	0.16	1	MG/L	03/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/27/2015	DNT
Sulfate	EPA-300.0	19	0.26	1	MG/L	03/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	04/03/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	04/03/2015	RAL
Arsenic	EPA-200.8	7.6	0.45	1	ug/L	03/31/2015	RAL
Barium	EPA-200.8	44	1.0	1	ug/L	03/31/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium	EPA-200.8	40000	100	1	ug/L	03/31/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron	EPA-200.8	17000	50	1	ug/L	03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-07
CLIENT SAMPLE ID	FPP-MW-2-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 12:37:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium	EPA-200.8	14000	50	1	ug/L	03/31/2015	RAL
Manganese	EPA-200.8	1500	2.0	1	ug/L	03/31/2015	RAL
Potassium	EPA-200.8	5800	50	1	ug/L	03/31/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium	EPA-200.8	42000	50	1	ug/L	03/31/2015	RAL
Arsenic (Dissolved)	EPA-200.8	5.9	0.45	1	ug/L	03/31/2015	RAL
Barium (Dissolved)	EPA-200.8	40	1.0	1	ug/L	03/31/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium (Dissolved)	EPA-200.8	39000	100	1	ug/L	03/31/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron (Dissolved)	EPA-200.8	15000	50	1	ug/L	03/31/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium (Dissolved)	EPA-200.8	14000	50	1	ug/L	03/31/2015	RAL
Manganese (Dissolved)	EPA-200.8	1400	2.0	1	ug/L	03/31/2015	RAL
Potassium (Dissolved)	EPA-200.8	5600	50	1	ug/L	03/31/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium (Dissolved)	EPA-200.8	42000	50	1	ug/L	03/31/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	260	0.0	1	MG/L	04/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	260	0.0	1	MG/L	04/02/2015	CAS
Ammonia as N	EPA-350.1	4.8	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	9.8	1.0	2	MG/L	04/09/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	116	03/30/2015	EBS
C25	NWTPH-DX	103	03/30/2015	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	128	03/31/2015	GAP
Terphenyl-d14	EPA-8270 SIM	56.2	03/31/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.
 Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-08
CLIENT SAMPLE ID	Trip Blanks	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	04/03/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	04/03/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	04/03/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	04/03/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	04/03/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	04/03/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	04/03/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	04/03/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	04/03/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	04/03/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	04/03/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	04/03/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030154-08
CLIENT SAMPLE ID	Trip Blanks	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	EPA-8260	U	10	1	ug/L	04/03/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	04/03/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	04/03/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	04/03/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	04/03/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	04/03/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	04/03/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/03/2015	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	97.0	04/03/2015	DLC
Toluene-d8	EPA-8260	99.9	04/03/2015	DLC
4-Bromofluorobenzene	EPA-8260	103	04/03/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
 130 - 2nd Ave. S.
 Edmonds, WA 98020
DATE: 5/21/2015
ALS SDG#: EV15030154
WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MB-032515W - Batch 91748 - Water by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/25/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032515W - Batch 91781 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	130	1	ug/L	03/25/2015	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	ug/L	03/25/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-040215W - Batch 92073 - Water by EPA-8260 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	04/02/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	04/02/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	04/02/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	04/02/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-040215W - Batch 92073 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-040215W - Batch 92073 - Water by EPA-8260

Acetone	EPA-8260	U	25	1	ug/L	04/02/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	04/02/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	04/02/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	04/02/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	04/02/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	04/02/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	04/02/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	04/02/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	04/02/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	04/02/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	04/02/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-040215W - Batch 92073 - Water by EPA-8260

S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	04/02/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	04/02/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032515W - Batch 91884 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.012	1	ug/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.0089	1	ug/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0067	1	ug/L	03/31/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.17	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.023	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.040	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.035	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.025	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.022	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.015	1	ug/L	03/31/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032615W - Batch 91897 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.012	1	ug/L	03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015 ALS SDG#: EV15030154 WDOE ACCREDITATION: C601
CLIENT CONTACT:	Jeffrey Fellows	
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	

LABORATORY BLANK RESULTS

MB-032615W - Batch 91897 - Water by EPA-8270 SIM

2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.0089	1	ug/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0067	1	ug/L	03/31/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.17	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.023	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.040	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.035	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.025	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.022	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.015	1	ug/L	03/31/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032515W - Batch 91898 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	03/30/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	03/30/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-032515W - Batch 91898 - Water by EPA-8270

Benzoic Acid	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	ug/L	03/30/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.90	1	ug/L	03/30/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	03/30/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	03/30/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	03/30/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Azobenzene	EPA-8270	U	1.6	1	ug/L	03/30/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.81	1	ug/L	03/30/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	03/30/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/27/2015 - Batch R253804 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB1-04/27/2015 - Batch R253804 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/27/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/06/2015 - Batch R253800A - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/08/2015 - Batch R253800B - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB1-04/08/2015 - Batch R253800B - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	04/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	04/08/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-254878 - Batch R253789 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	04/01/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-253791 - Batch R253791 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	03/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/27/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/27/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-432015 - Batch R252478 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.11	1	ug/L	04/03/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030154
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MBLK-432015 - Batch R252478 - Water by EPA-7470

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-253788 - Batch R253788 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.20	1	ug/L	04/03/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-033015W - Batch 91902 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	0.45	1	ug/L	03/31/2015	RAL
Barium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium	EPA-200.8	U	100	1	ug/L	03/31/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL
Manganese	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Potassium	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-033015W - Batch 91903 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	03/31/2015	RAL
Barium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium (Dissolved)	EPA-200.8	U	100	1	ug/L	03/31/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium (Dissolved)	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Potassium (Dissolved)	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030154
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MB-033015W - Batch 91903 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium (Dissolved)	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/02/2015 - Batch R253798 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	04/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	04/02/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB2-04/07/2015 - Batch R253798 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	04/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	04/07/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/06/2015 - Batch R253796 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/09/2015 - Batch R253795 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	04/09/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 91781 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	99.2			03/26/2015	EBS
TPH-Diesel Range - BSD	NWTPH-DX	97.1	2		03/26/2015	EBS

ALS Test Batch ID: 92073 - Water by EPA-8260 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Trichloroethene - BS	EPA-8260 SIM	101			04/02/2015	DLC
Trichloroethene - BSD	EPA-8260 SIM	99.2	2		04/02/2015	DLC

ALS Test Batch ID: 92073 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	99.7			04/02/2015	DLC
1,1-Dichloroethene - BSD	EPA-8260	98.8	1		04/02/2015	DLC
Benzene - BS	EPA-8260	96.3			04/02/2015	DLC
Benzene - BSD	EPA-8260	95.8	1		04/02/2015	DLC
Toluene - BS	EPA-8260	100			04/02/2015	DLC
Toluene - BSD	EPA-8260	99.7	1		04/02/2015	DLC
Chlorobenzene - BS	EPA-8260	101			04/02/2015	DLC
Chlorobenzene - BSD	EPA-8260	102	2		04/02/2015	DLC

ALS Test Batch ID: 91897 - Water by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	EPA-8270 SIM	82.8			03/31/2015	GAP
Naphthalene - BSD	EPA-8270 SIM	89.6	8		03/31/2015	GAP
Acenaphthene - BS	EPA-8270 SIM	89.8			03/31/2015	GAP
Acenaphthene - BSD	EPA-8270 SIM	98.6	9		03/31/2015	GAP
Pentachlorophenol - BS	EPA-8270 SIM	71.9			03/31/2015	GAP
Pentachlorophenol - BSD	EPA-8270 SIM	76.4	6		03/31/2015	GAP
Pyrene - BS	EPA-8270 SIM	94.7			03/31/2015	GAP
Pyrene - BSD	EPA-8270 SIM	110	15		03/31/2015	GAP
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	96.0			03/31/2015	GAP
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	103	7		03/31/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 91898 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	34.5			03/30/2015	GAP
Phenol - BSD	EPA-8270	34.4	0		03/30/2015	GAP
2-Chlorophenol - BS	EPA-8270	92.0			03/30/2015	GAP
2-Chlorophenol - BSD	EPA-8270	92.8	1		03/30/2015	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	189		SQ1	03/30/2015	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	195	3	SQ1	03/30/2015	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	97.0			03/30/2015	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	100	3		03/30/2015	GAP
4-Nitrophenol - BS	EPA-8270	19.5			03/30/2015	GAP
4-Nitrophenol - BSD	EPA-8270	17.3	12		03/30/2015	GAP
2,4-Dinitrotoluene - BS	EPA-8270	86.1			03/30/2015	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	83.7	3		03/30/2015	GAP
Pyrene - BS	EPA-8270	120			03/30/2015	GAP
Pyrene - BSD	EPA-8270	128	6		03/30/2015	GAP

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

ALS Test Batch ID: R253804 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	90.5			04/28/2015	CAS
PCB-1016 - BSD	EPA-8082	95.0	5		04/27/2015	CAS
PCB-1260 - BS	EPA-8082	108		SQ1	04/28/2015	CAS
PCB-1260 - BSD	EPA-8082	97.5	10		04/27/2015	CAS

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

ALS Test Batch ID: R253800A - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	87.5			04/06/2015	CAS
A-BHC - BSD	EPA-8081	81.5	7		04/06/2015	CAS
G-BHC - BS	EPA-8081	87.0			04/06/2015	CAS
G-BHC - BSD	EPA-8081	81.5	7		04/06/2015	CAS
B-BHC - BS	EPA-8081	88.5			04/06/2015	CAS
B-BHC - BSD	EPA-8081	84.0	5		04/06/2015	CAS
Heptachlor - BS	EPA-8081	82.0			04/06/2015	CAS
Heptachlor - BSD	EPA-8081	76.5	7		04/06/2015	CAS
D-BHC - BS	EPA-8081	89.0			04/06/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
D-BHC - BSD	EPA-8081	83.5	6		04/06/2015	CAS
Aldrin - BS	EPA-8081	78.0			04/06/2015	CAS
Aldrin - BSD	EPA-8081	71.5	9		04/06/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	86.0			04/06/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	80.5	7		04/06/2015	CAS
Chlordane - BS	EPA-8081	83.5			04/06/2015	CAS
Chlordane - BSD	EPA-8081	78.0	7		04/06/2015	CAS
Endosulfan I - BS	EPA-8081	59.0			04/06/2015	CAS
Endosulfan I - BSD	EPA-8081	56.0	5		04/06/2015	CAS
4,4'-DDE - BS	EPA-8081	84.0			04/06/2015	CAS
4,4'-DDE - BSD	EPA-8081	79.0	6		04/06/2015	CAS
Dieldrin - BS	EPA-8081	87.0			04/06/2015	CAS
Dieldrin - BSD	EPA-8081	82.0	6		04/06/2015	CAS
Endrin - BS	EPA-8081	90.0			04/06/2015	CAS
Endrin - BSD	EPA-8081	84.0	7		04/06/2015	CAS
4,4'-DDD - BS	EPA-8081	86.5			04/06/2015	CAS
4,4'-DDD - BSD	EPA-8081	80.0	8		04/06/2015	CAS
Endosulfan II - BS	EPA-8081	66.0			04/06/2015	CAS
Endosulfan II - BSD	EPA-8081	62.0	6		04/06/2015	CAS
4,4'-DDT - BS	EPA-8081	84.0			04/06/2015	CAS
4,4'-DDT - BSD	EPA-8081	75.5	11		04/06/2015	CAS
Endrin Aldehyde - BS	EPA-8081	81.0			04/06/2015	CAS
Endrin Aldehyde - BSD	EPA-8081	75.5	7		04/06/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	85.5			04/06/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	80.0	7		04/06/2015	CAS
Methoxychlor - BS	EPA-8081	87.5			04/06/2015	CAS
Methoxychlor - BSD	EPA-8081	78.5	11		04/06/2015	CAS
Hexachlorobenzene - BS	EPA-8081	83.5			04/06/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	79.0	6		04/06/2015	CAS
Toxaphene - BS	EPA-8081	102			04/06/2015	CAS
Toxaphene - BSD	EPA-8081	108	6		04/06/2015	CAS

ALS Test Batch ID: R253800B - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	77.0			04/08/2015	CAS
A-BHC - BSD	EPA-8081	76.5	1		04/08/2015	CAS
G-BHC - BS	EPA-8081	77.0			04/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
G-BHC - BSD	EPA-8081	76.0	1		04/08/2015	CAS
B-BHC - BS	EPA-8081	78.0			04/08/2015	CAS
B-BHC - BSD	EPA-8081	78.5	1		04/08/2015	CAS
Heptachlor - BS	EPA-8081	75.5			04/08/2015	CAS
Heptachlor - BSD	EPA-8081	74.0	2		04/08/2015	CAS
D-BHC - BS	EPA-8081	78.5			04/08/2015	CAS
D-BHC - BSD	EPA-8081	77.5	1		04/08/2015	CAS
Aldrin - BS	EPA-8081	65.5			04/08/2015	CAS
Aldrin - BSD	EPA-8081	68.5	4		04/08/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	78.0			04/08/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	77.5	1		04/08/2015	CAS
Chlordane - BS	EPA-8081	76.0			04/08/2015	CAS
Chlordane - BSD	EPA-8081	76.0	0		04/08/2015	CAS
Endosulfan I - BS	EPA-8081	49.2			04/08/2015	CAS
Endosulfan I - BSD	EPA-8081	48.7	1		04/08/2015	CAS
4,4'-DDE - BS	EPA-8081	77.0			04/08/2015	CAS
4,4'-DDE - BSD	EPA-8081	76.5	1		04/08/2015	CAS
Dieldrin - BS	EPA-8081	78.5			04/08/2015	CAS
Dieldrin - BSD	EPA-8081	78.5	0		04/08/2015	CAS
Endrin - BS	EPA-8081	83.0			04/08/2015	CAS
Endrin - BSD	EPA-8081	83.0	0		04/08/2015	CAS
4,4'-DDD - BS	EPA-8081	77.5			04/08/2015	CAS
4,4'-DDD - BSD	EPA-8081	77.0	1		04/08/2015	CAS
Endosulfan II - BS	EPA-8081	55.5			04/08/2015	CAS
Endosulfan II - BSD	EPA-8081	55.5	0		04/08/2015	CAS
4,4'-DDT - BS	EPA-8081	77.5			04/08/2015	CAS
4,4'-DDT - BSD	EPA-8081	74.5	4		04/08/2015	CAS
Endrin Aldehyde - BS	EPA-8081	75.0			04/08/2015	CAS
Endrin Aldehyde - BSD	EPA-8081	73.5	2		04/08/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	77.0			04/08/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	76.0	1		04/08/2015	CAS
Methoxychlor - BS	EPA-8081	83.5			04/08/2015	CAS
Methoxychlor - BSD	EPA-8081	78.5	6		04/08/2015	CAS
Hexachlorobenzene - BS	EPA-8081	75.0			04/08/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	77.5	3		04/08/2015	CAS
Toxaphene - BS	EPA-8081	88.0			04/08/2015	CAS
Toxaphene - BSD	EPA-8081	82.5	6		04/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030154
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R253789 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	85.0			04/01/2015	DLC

ALS Test Batch ID: R253791 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	96.0			03/27/2015	DNT
Chloride - BSD	EPA-300.0	94.0	2		03/27/2015	DNT
Fluoride - BS	EPA-300.0	99.0			03/27/2015	DNT
Fluoride - BSD	EPA-300.0	108	9		03/27/2015	DNT
Nitrate as N - BS	EPA-300.0	103			03/27/2015	DNT
Nitrate as N - BSD	EPA-300.0	101	2		03/27/2015	DNT
Nitrite as N - BS	EPA-300.0	97.0			03/27/2015	DNT
Nitrite as N - BSD	EPA-300.0	93.0	4		03/27/2015	DNT
Sulfate - BS	EPA-300.0	107			03/27/2015	DNT
Sulfate - BSD	EPA-300.0	98.0	9		03/27/2015	DNT

ALS Test Batch ID: R252478 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	103			04/03/2015	RAL
Mercury - BSD	EPA-7470	103	0		04/03/2015	RAL

ALS Test Batch ID: R253788 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	103			04/03/2015	RAL
Mercury (Dissolved) - BSD	EPA-7470	103	0		04/03/2015	RAL

ALS Test Batch ID: 91902 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	103			03/31/2015	RAL
Arsenic - BSD	EPA-200.8	102	0		03/31/2015	RAL
Barium - BS	EPA-200.8	107			03/31/2015	RAL
Barium - BSD	EPA-200.8	105	2		03/31/2015	RAL
Cadmium - BS	EPA-200.8	106			03/31/2015	RAL
Cadmium - BSD	EPA-200.8	105	2		03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015 ALS SDG#: EV15030154 WDOE ACCREDITATION: C601
CLIENT CONTACT:	Jeffrey Fellows	
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Calcium - BS	EPA-200.8	105			03/31/2015	RAL
Calcium - BSD	EPA-200.8	103	2		03/31/2015	RAL
Chromium - BS	EPA-200.8	104			03/31/2015	RAL
Chromium - BSD	EPA-200.8	104	0		03/31/2015	RAL
Iron - BS	EPA-200.8	105			03/31/2015	RAL
Iron - BSD	EPA-200.8	104	1		03/31/2015	RAL
Lead - BS	EPA-200.8	105			03/31/2015	RAL
Lead - BSD	EPA-200.8	105	0		03/31/2015	RAL
Magnesium - BS	EPA-200.8	105			03/31/2015	RAL
Magnesium - BSD	EPA-200.8	104	1		03/31/2015	RAL
Manganese - BS	EPA-200.8	104			03/31/2015	RAL
Manganese - BSD	EPA-200.8	104	0		03/31/2015	RAL
Potassium - BS	EPA-200.8	105			03/31/2015	RAL
Potassium - BSD	EPA-200.8	104	1		03/31/2015	RAL
Selenium - BS	EPA-200.8	104			03/31/2015	RAL
Selenium - BSD	EPA-200.8	103	1		03/31/2015	RAL
Silver - BS	EPA-200.8	106			03/31/2015	RAL
Silver - BSD	EPA-200.8	105	1		03/31/2015	RAL
Sodium - BS	EPA-200.8	104			03/31/2015	RAL
Sodium - BSD	EPA-200.8	103	1		03/31/2015	RAL

ALS Test Batch ID: 91903 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	103			03/31/2015	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	102	0		03/31/2015	RAL
Barium (Dissolved) - BS	EPA-200.8	107			03/31/2015	RAL
Barium (Dissolved) - BSD	EPA-200.8	105	2		03/31/2015	RAL
Cadmium (Dissolved) - BS	EPA-200.8	106			03/31/2015	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	105	2		03/31/2015	RAL
Calcium (Dissolved) - BS	EPA-200.8	105			03/31/2015	RAL
Calcium (Dissolved) - BSD	EPA-200.8	103	2		03/31/2015	RAL
Chromium (Dissolved) - BS	EPA-200.8	104			03/31/2015	RAL
Chromium (Dissolved) - BSD	EPA-200.8	104	0		03/31/2015	RAL
Iron (Dissolved) - BS	EPA-200.8	105			03/31/2015	RAL
Iron (Dissolved) - BSD	EPA-200.8	104	1		03/31/2015	RAL
Lead (Dissolved) - BS	EPA-200.8	105			03/31/2015	RAL
Lead (Dissolved) - BSD	EPA-200.8	105	0		03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015 ALS SDG#: EV15030154 WDOE ACCREDITATION: C601
CLIENT CONTACT:	Jeffrey Fellows	
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Magnesium (Dissolved) - BS	EPA-200.8	105			03/31/2015	RAL
Magnesium (Dissolved) - BSD	EPA-200.8	104	1		03/31/2015	RAL
Manganese (Dissolved) - BS	EPA-200.8	104			03/31/2015	RAL
Manganese (Dissolved) - BSD	EPA-200.8	104	0		03/31/2015	RAL
Potassium (Dissolved) - BS	EPA-200.8	105			03/31/2015	RAL
Potassium (Dissolved) - BSD	EPA-200.8	104	1		03/31/2015	RAL
Selenium (Dissolved) - BS	EPA-200.8	104			03/31/2015	RAL
Selenium (Dissolved) - BSD	EPA-200.8	103	1		03/31/2015	RAL
Silver (Dissolved) - BS	EPA-200.8	106			03/31/2015	RAL
Silver (Dissolved) - BSD	EPA-200.8	105	1		03/31/2015	RAL
Sodium (Dissolved) - BS	EPA-200.8	104			03/31/2015	RAL
Sodium (Dissolved) - BSD	EPA-200.8	103	1		03/31/2015	RAL

ALS Test Batch ID: R253798 - Water by SM2320B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total - BS	SM2320B	105			04/07/2015	CAS
Alkalinity as CaCO3, Total - BS	SM2320B	105			04/02/2015	CAS

ALS Test Batch ID: R253796 - Water by EPA-350.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N 5X Dilution - BS	EPA-350.1	97.4			04/06/2015	CAS

ALS Test Batch ID: R253795 - Water by SM5310C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - BS	SM5310C	95.5			04/09/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015	ALS SDG#: EV15030154
		WDOE ACCREDITATION: C601	
CLIENT CONTACT:	Jeffrey Fellows		
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032		

MATRIX SPIKE RESULTS

ALS Test Batch ID: R253795 - Water

Parent Sample: FPP-MW-3-032615

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - MS	SM5310C	1.2	25.0	25.4		96.8		04/09/2015	CAS

APPROVED BY



Laboratory Director



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080

Chain-of-Custody Record

EV15030154

Date 3/26/15
Page 1 of 2

Project Name <u>Closed City of Yakima Landfill</u> Project No. <u>1149008.030.032</u>						Testing Parameters										Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____						
Project Location/Event <u>Closed City of Yakima LF, WA / 3rd Quarter GW</u>						<div style="display: flex; flex-direction: column; justify-content: space-around;"> <div style="display: flex; justify-content: space-between;"> Metals (Total) * Metals (Dissolved) * </div> <div style="display: flex; justify-content: space-between;"> Mercury (Total) Mercury (Dissolved) </div> <div style="display: flex; justify-content: space-between;"> Chlorinated Pesticides PCB's </div> <div style="display: flex; justify-content: space-between;"> VOC's SVOC's </div> <div style="display: flex; justify-content: space-between;"> PAH's TPH-HCED </div> <div style="display: flex; justify-content: space-between;"> TPH-Dx ** TPH-G </div> </div>																
Sampler's Name <u>Stephanie Renando, Shane Kostka</u>																						
Project Contact <u>Jeffrey Fellows</u>																						
Send Results To <u>J. Fellows, A. Halvorsen, K. Schultz</u>																						
Sample I.D.	Date	Time	Matrix	No. of Containers											Observations/Comments							
1 FPP-MW-3-032615	3/26/15	0950	AQ	14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X Allow water samples to settle, collect aliquot from clear portion
2 MW-11-032615		1045		14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3 MW-18-032615		1155		14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	NWTPH-Dx - run acid wash silica gel cleanup
4 MW-107-032615		1314		14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5 Dup-2-032615		1352		14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Analyze for EPH if no specific product identified
6 MW-102-032615		1355		14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7 FPP-MW-2-032615		1237		1		X	X															VOC/BTEX/VPH (soil):
FPP-MW-2-032615		1109	3/26/15	1		X	X															— non-preserved
FPP-MW-2-032615		1127		2																		— preserved w/methanol
FPP-MW-2-032615		0841	12:37pm	1																		— preserved w/sodium bisulfate
FPP-MW-2-032515	3/25/15	1355		1																		— Freeze upon receipt
8 Trip Blanks	3/26/15			2								X										— Dissolved metal water samples field filtered
Note: Samples collected for dissolved analytes have been field filtered																Other *As, Ba, Ca, Cd, Cr, Fe, K, Pb, Mg, Mn, Na, Se, Ag, ** Run w/ AUD w/out silica gel cleanup. O= Hold pending HcID result.						

Special Shipment/Handling or Storage Requirements <u>on ice</u>	Method of Shipment <u>Fed Ex</u>
-----------------------------------------------------------------	----------------------------------

Relinquished by Signature <u>[Signature]</u> Printed Name <u>Stephanie Renando</u> Company <u>Landau Associates</u> Date <u>3/26/15</u> Time <u>1600</u>	Received by Signature <u>[Signature]</u> Printed Name <u>Shawn Robinson</u> Company <u>ALS</u> Date <u>3/27/15</u> Time <u>10:30</u>	Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____	Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____
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- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080
-

Chain-of-Custody Record

EV15030154

Date 3/26/15
Page 2 of 2

Project Name <u>Closed City of Yakima Landfill</u> Project No. <u>1148008.030.032</u>					Testing Parameters										Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____							
Project Location/Event <u>Closed City of Yakima Landfill, WA/3rd Quarter GW</u>					Conventional/TDS Alkalinity Bicarbonate Ammonia/TOC's																	
Sampler's Name <u>Stephanie Renando, Shane Kostka</u>																						
Project Contact <u>Jeffrey Fellows</u>																						
Send Results To <u>J. Fellows, A. Halvorsen, K. Schultz</u>															Observations/Comments							
Sample I.D.	Date	Time	Matrix	No. of Containers																		
1 FPP-MW-3-032615	3/26/15	0950	AQ	14	X	X	X	X														<input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion <input type="checkbox"/> NWTPH-Dx - run acid wash silica gel cleanup <input type="checkbox"/> Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt <input type="checkbox"/> Dissolved metal water samples field filtered Other <u>Fluoride, Nitrate, Nitrite, Chloride, Sulphate</u>
2 MW-11-032615		1045		14	X	X	X	X														
3 MW-18-032615		1155		14	X	X	X	X														
4 MW-107-032615		1314		14	X	X	X	X														
5 Dup-2-032615		1352		14	X	X	X	X														
6 MW-102-032615		1355		14	X	X	X	X														
7 FPP-MW-2-032615		1427 12:37		2	X	X	X	X														

Special Shipment/Handling or Storage Requirements <u>on ice</u>	Method of Shipment <u>Fed Ex</u>
-----------------------------------------------------------------	----------------------------------

Relinquished by Signature <u>[Signature]</u> Printed Name <u>Stephanie Renando</u> Company <u>Landau Associates</u> Date <u>3/26/15</u> Time <u>1600</u>	Received by Signature <u>[Signature]</u> Printed Name <u>Shawn Robinson</u> Company <u>ALS</u> Date <u>3/27/15</u> Time <u>10:30</u>	Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____	Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____
----------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV15030154

Project: Closed City of Yakima Landfill / #1148008.030.032

Received Date: 3/27/15 Received Time: 10:30 am By: SML

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express Priority Overnight

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals on outside of sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1</u> Where? <u>Top of each cooler</u>			
Custody seal date: <u>3/26/15</u> Seal name: <u>Landau</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: None

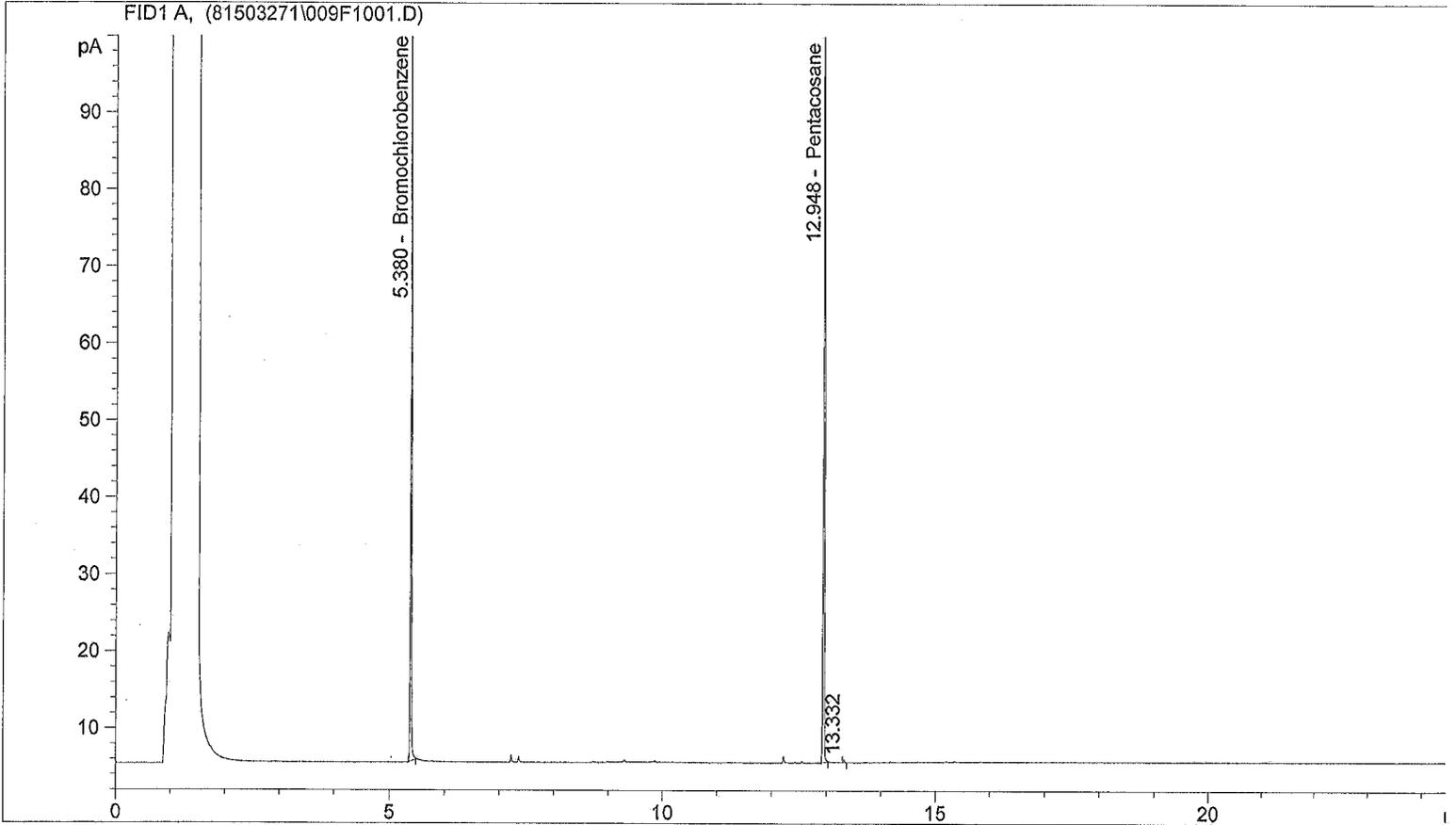
Temperature of cooler upon receipt: 0.8°C, 1.5°C, 4.0°C, Cold Cool Ambient N/A

Explain any discrepancies: 1.4°C, 2.4°C all on ice

Was client contacted? Who was called? By whom? Date:

Outcome of call: _____

Sample Name: EV15030154-01 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	145.591	25.188
12.948		Pentacosane	157.056	7.973

*101%
80%*

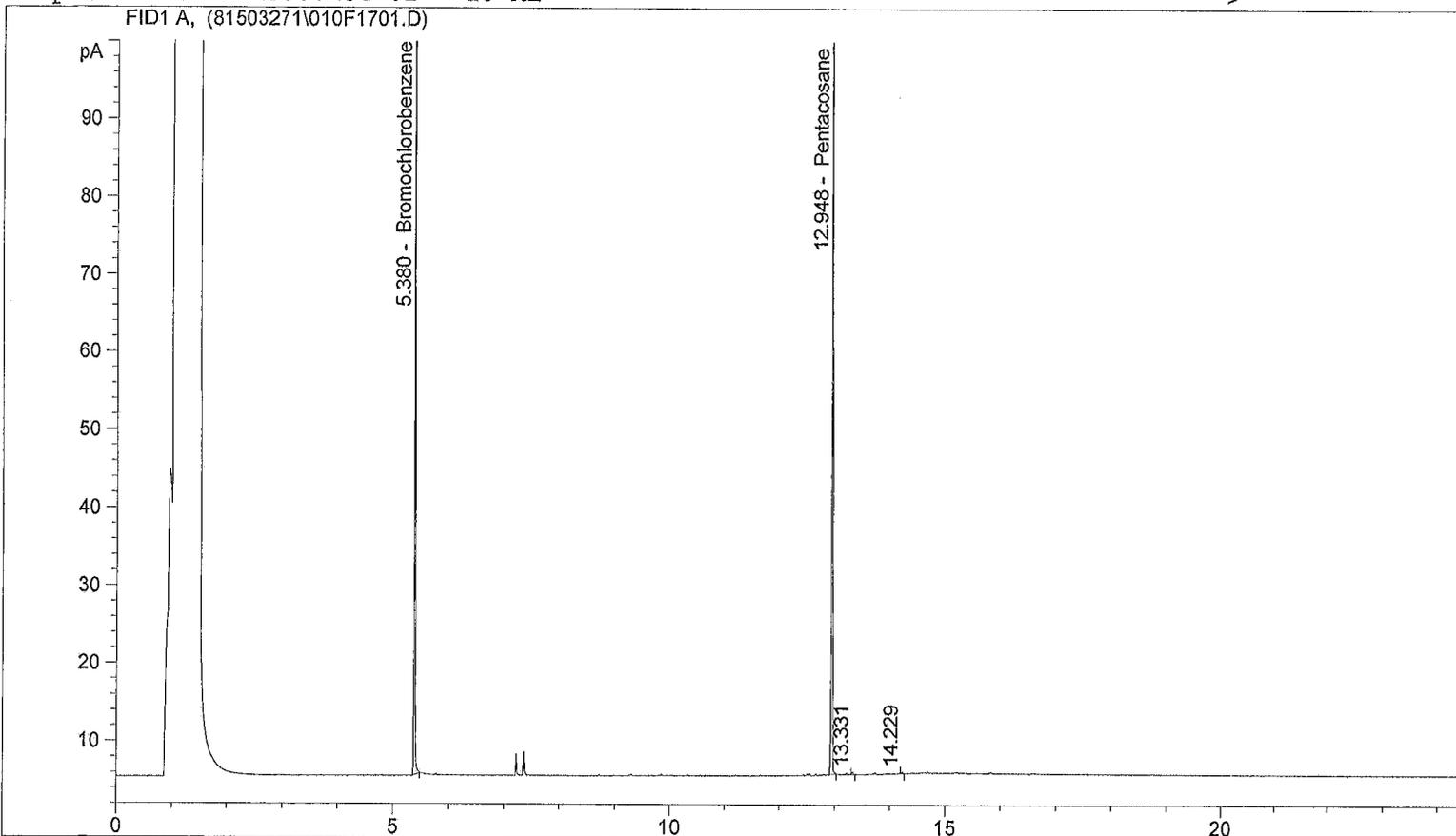
*G < 130 µg/L
D < 310 µg/L*

REV D BY *MS*
E *3/31/15*

03.30.15EJ

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503271\010F1701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 3/27/2015 5:25:22 PM 3/27/2015 5:25:22 PM
 Report Creation: 3/30/2015 11:38:49 AM

Sample Name: EV15030154-02 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	122.557	21.203
12.948		Pentacosane	136.122	6.911

85%
69%

G < 130 µg/L
 D < 310 µg/L

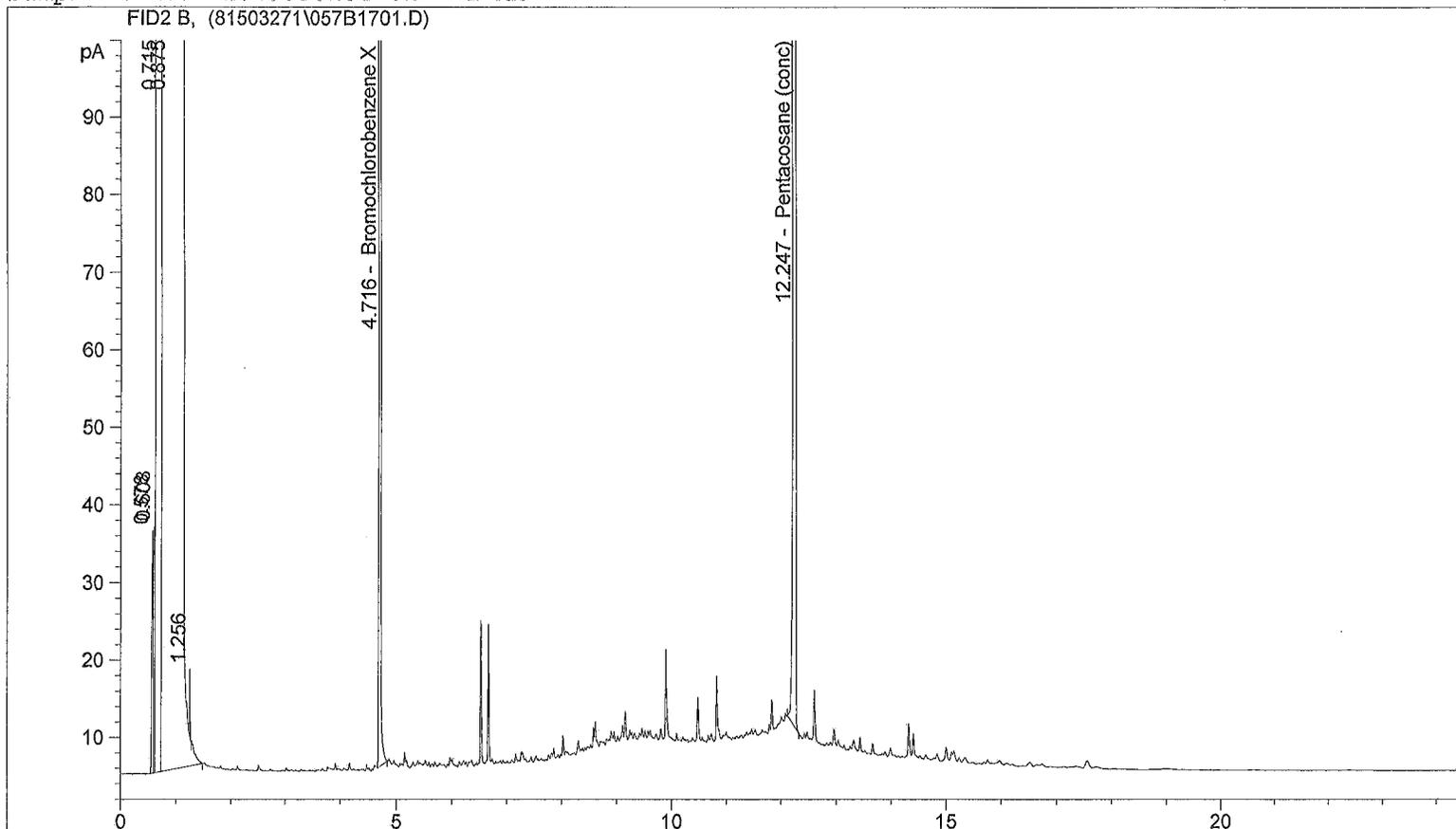
REVIEWED BY *MB*
 DATE *3/31/15*

03.30.15ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503271\057B1701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/27/2015 5:25:23 PM 3/27/2015 5:25:23 PM
 Report Creation: 3/30/2015 11:36:39 AM

Sample Name: EV15030154-02 1 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.716	FID2 B,	Bromochlorobenzene X	2822.135	219.731
12.247		Pentacosane (conc)	2977.020	77.267

77%

0 < 310 µg/L

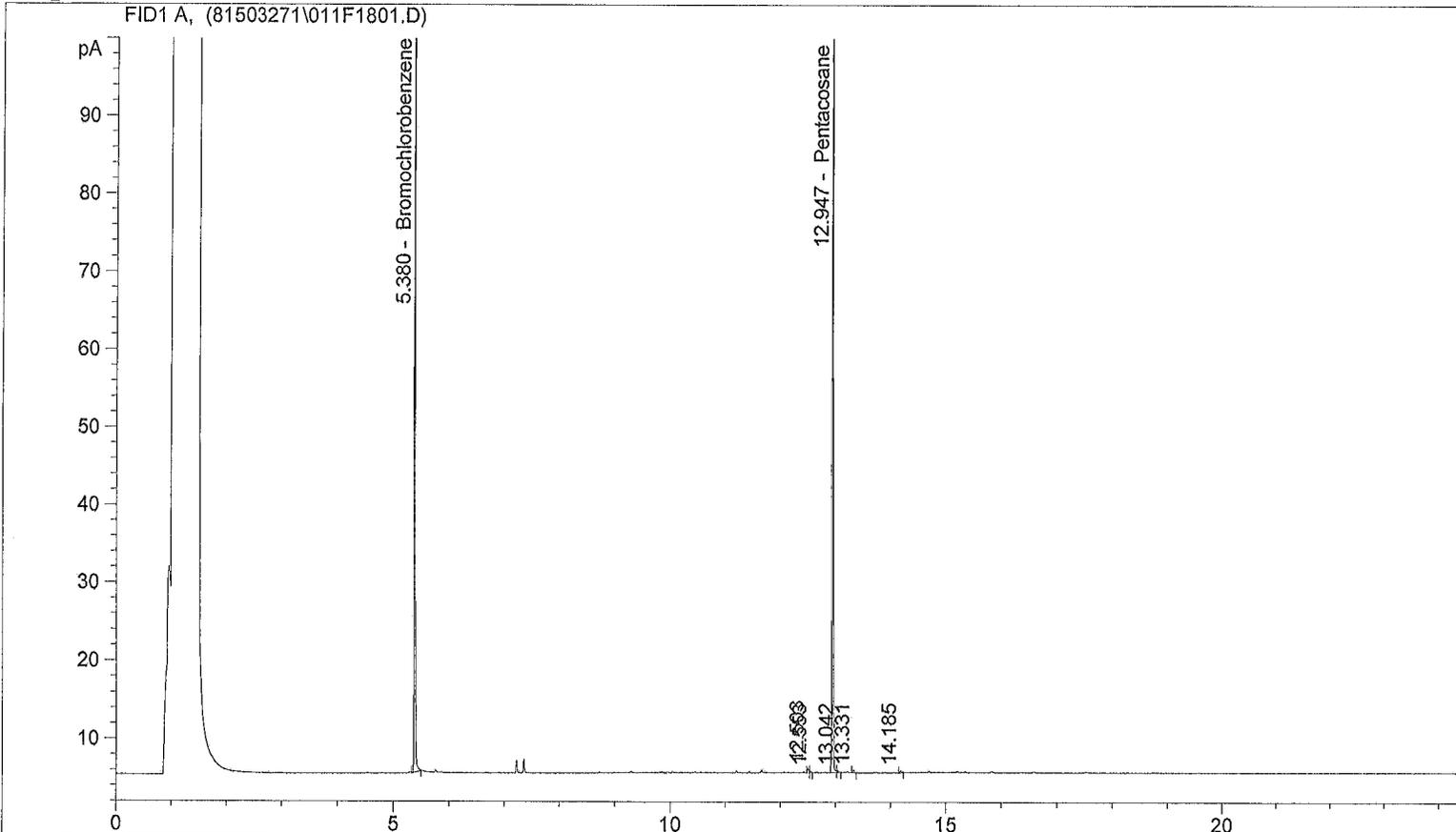
REV	D BY	ES
	E	3/31/5

03.30.15 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503271\011F1801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCLDW.M
 Injection Date & Time: 3/27/2015 6:00:05 PM 3/27/2015 6:00:05 PM
 Report Creation: 3/30/2015 11:39:01 AM

Sample Name: EV15030154-03 10 ML

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Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	130.575	22.590
12.947		Pentacosane	145.259	7.374

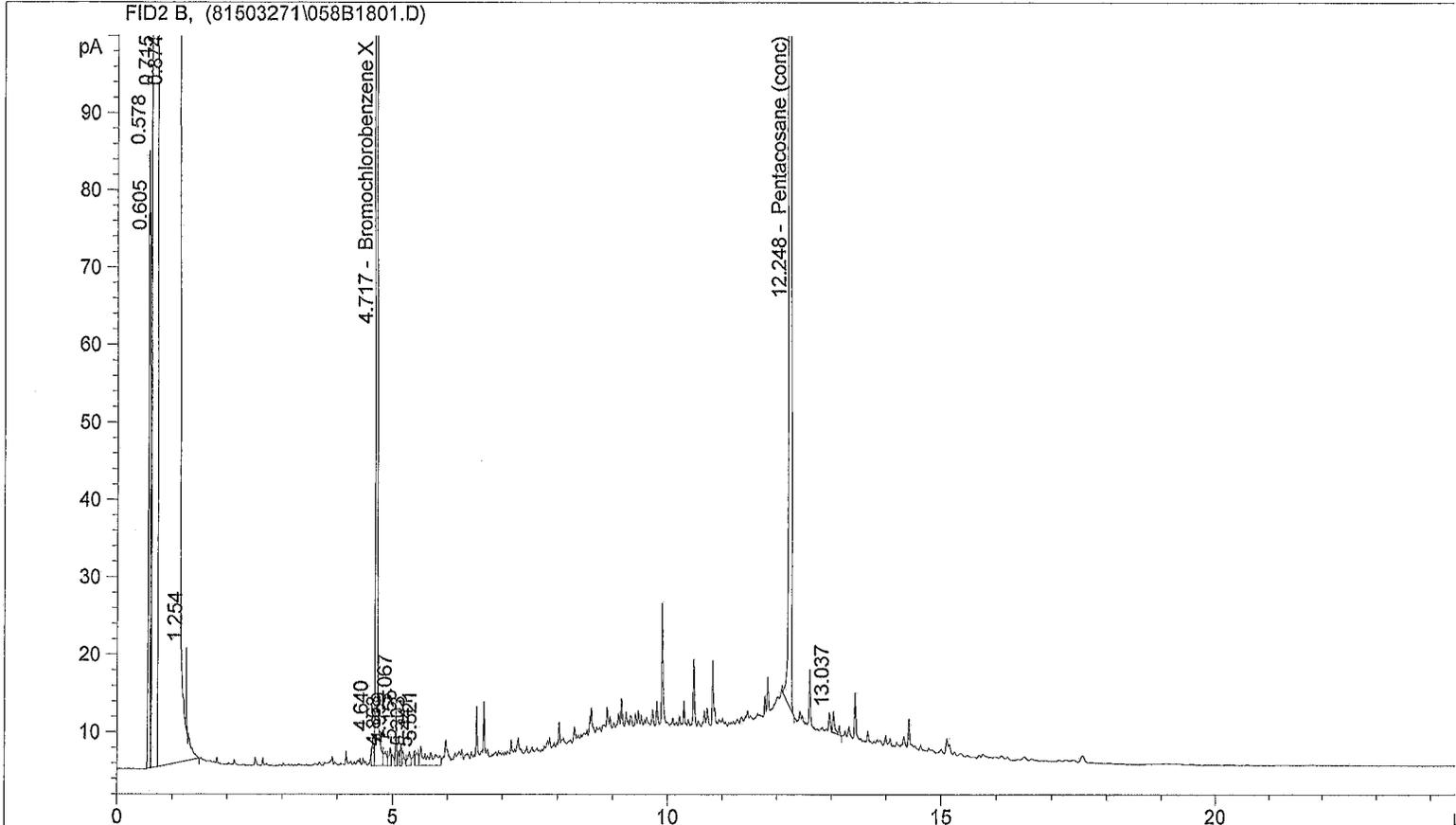
90%
74%

G < 130 ug/L
 D < 310 ug/L

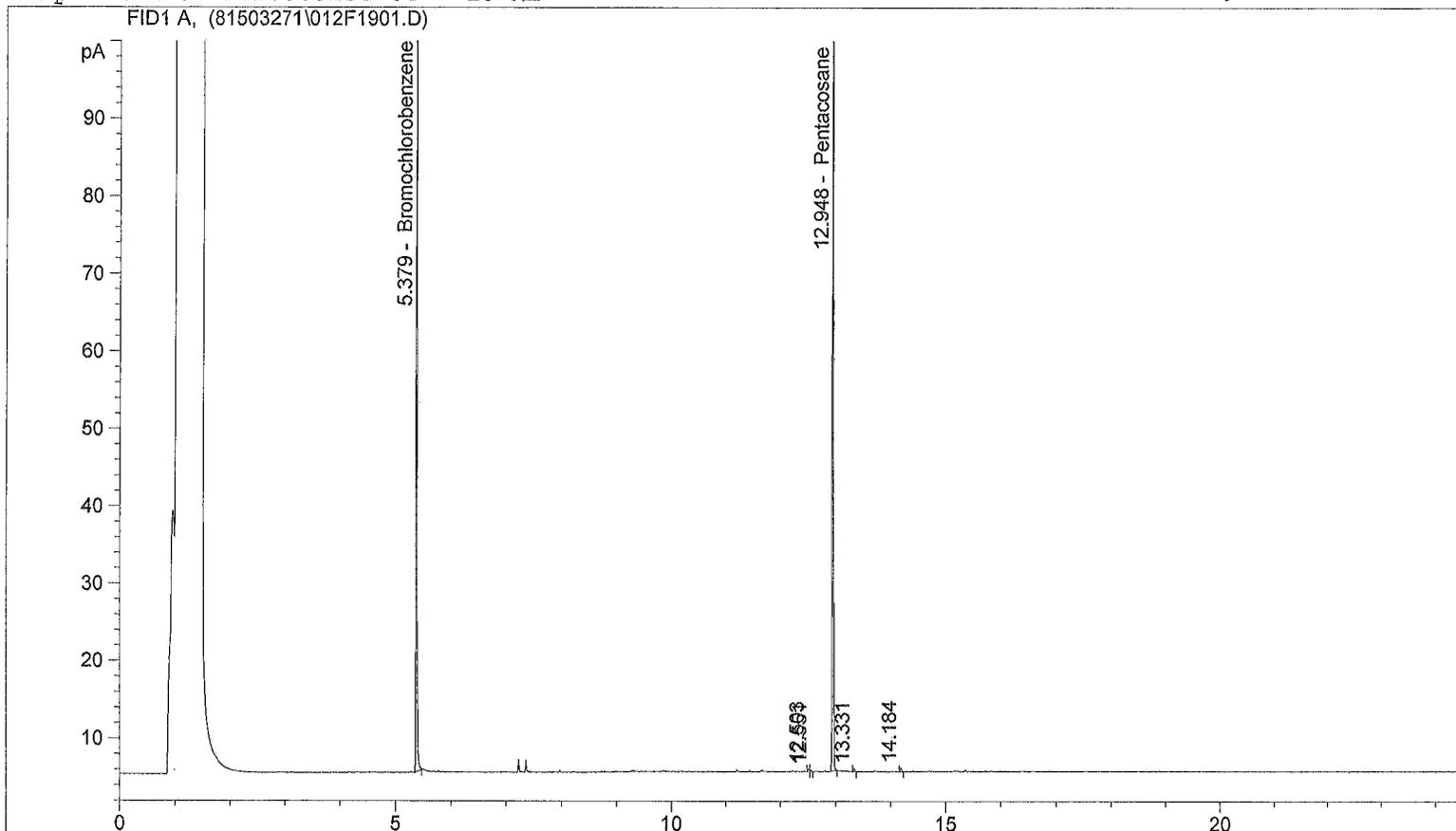
REVIEWED BY MS
 DATE 3/31/15

03.30.15 ET

Sample Name: EV15030154-03 1 ML



Sample Name: EV15030154-04 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.379	FID1 A,	Bromochlorobenzene	143.940	24.902 <i>100%</i>
12.948		Pentacosane	157.221	7.982 <i>80%</i>

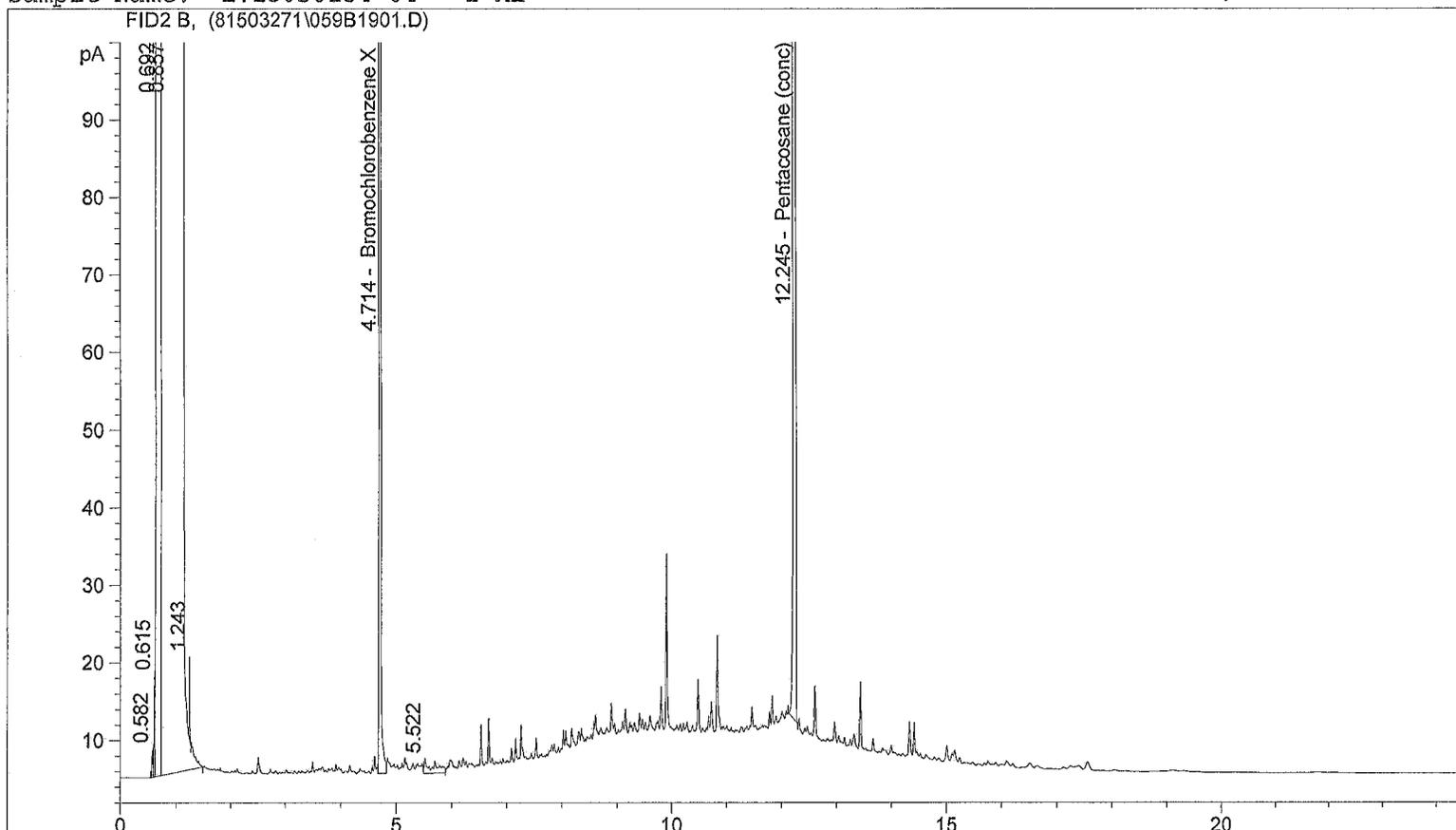
G < 130 µg/L
D < 310 µg/L

REVIEWED BY *MB*
 DATE *3/31/15*

03.30.15E1

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503271\059B1901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/27/2015 6:34:50 PM 3/27/2015 6:34:50 PM
 Report Creation: 3/30/2015 11:37:13 AM

Sample Name: EV15030154-04 1 ML ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.714	FID2 B,	Bromochlorobenzene X	2562.560	199.521
12.245		Pentacosane (conc)	2694.852	69.944

70%

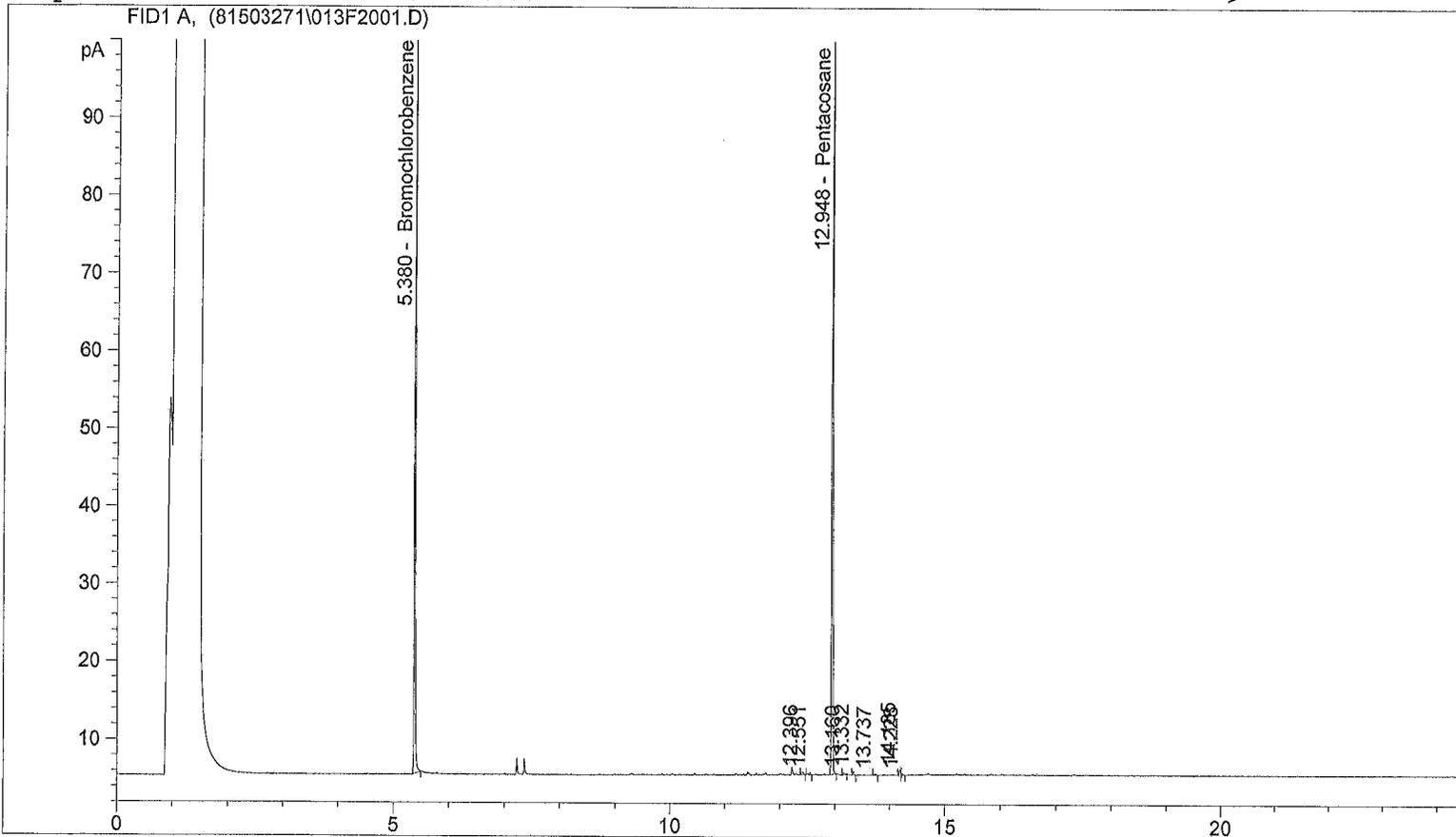
0 < 310 µg/L

REVIEWED BY MB
 DATE 3/3/15

03.30.15

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503271\013F2001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 3/27/2015 7:09:29 PM 3/27/2015 7:09:29 PM
 Report Creation: 3/30/2015 11:39:25 AM

Sample Name: EV15030154-05 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	132.078	22.850
12.948		Pentacosane	145.008	7.362

91%
74%

G < 130 µg/L
 D < 310 µg/L

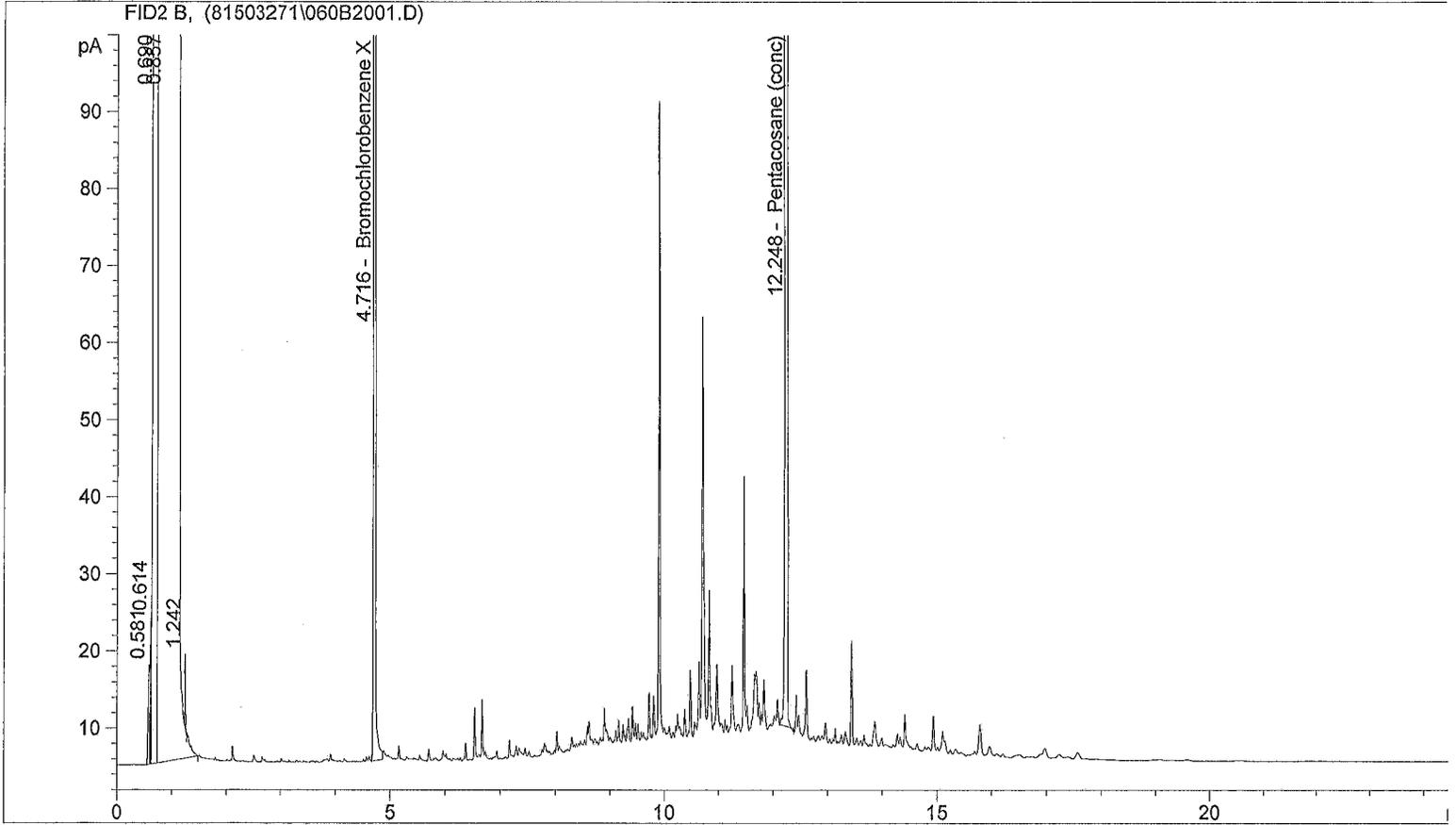
REVIEWED BY [Signature] 3/31/15

03.30.15ET

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503271\060B2001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/27/2015 7:09:29 PM 3/27/2015 7:09:29 PM
 Report Creation: 3/30/2015 11:37:34 AM

Sample Name: EV15030154-05 1 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.716	FID2 B,	Bromochlorobenzene X	2808.152	218.643
12.248		Pentacosane (conc)	2959.077	76.802

77%

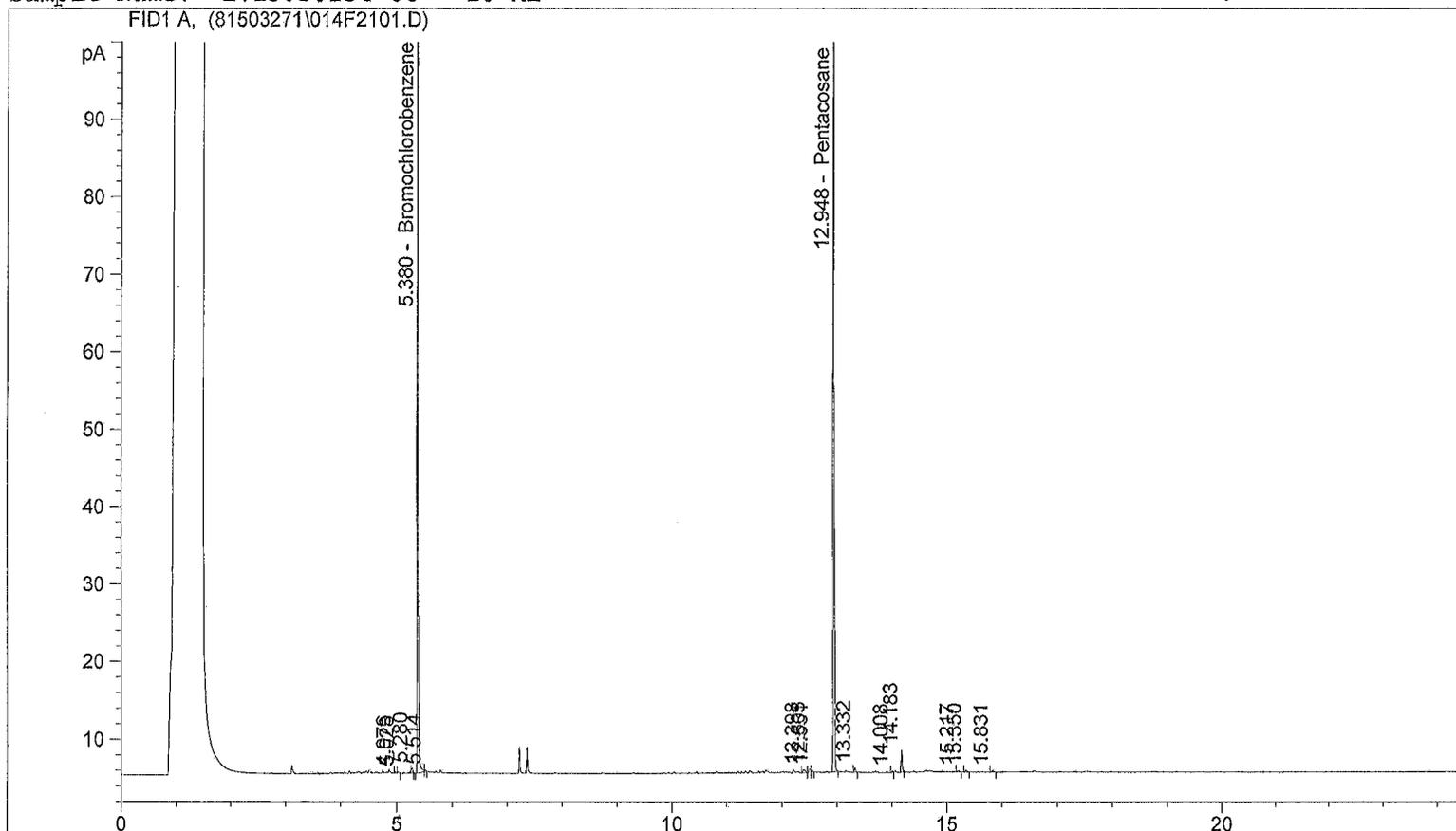
0 < 310 µg/L

REVIEWED BY *BS*
 DATE *3/31/15*

03.30.15E1

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503271\014F2101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCLDW.M
 Injection Date & Time: 3/27/2015 7:44:16 PM 3/27/2015 7:44:16 PM
 Report Creation: 3/30/2015 11:39:37 AM

Sample Name: EV15030154-06 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	130.273	22.538
12.948		Pentacosane	145.784	7.401

90%
74%

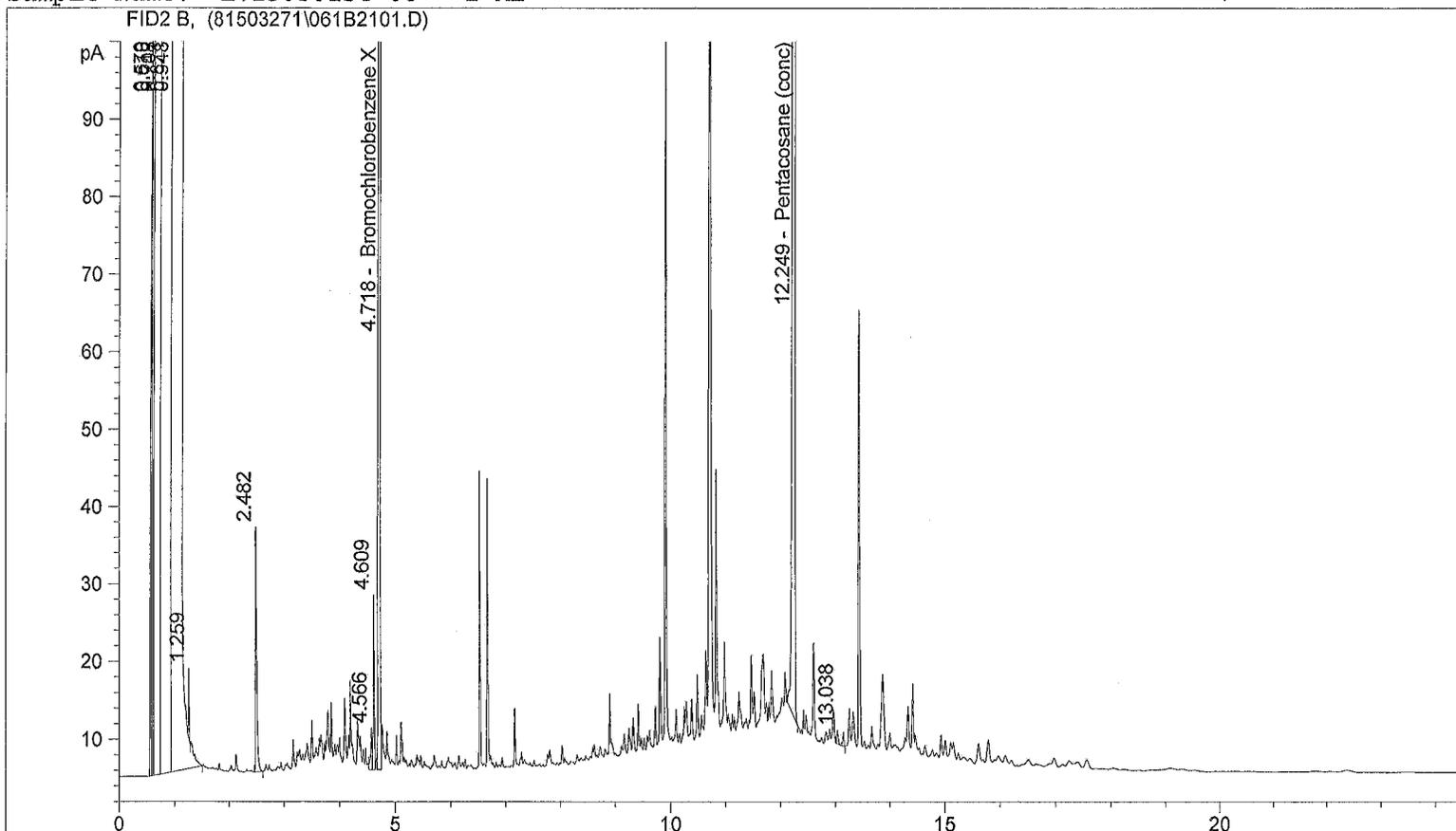
G < 130 µg/L
 D < 310 µg/L

REVIEWED BY *MS*
 DATE 3/31/15

03.30.15ES

Sample Name: EV15030154-06 1 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.718	FID2 B,	Bromochlorobenzene X	2915.154	226.974
12.249		Pentacosane (conc)	3142.714	81.568

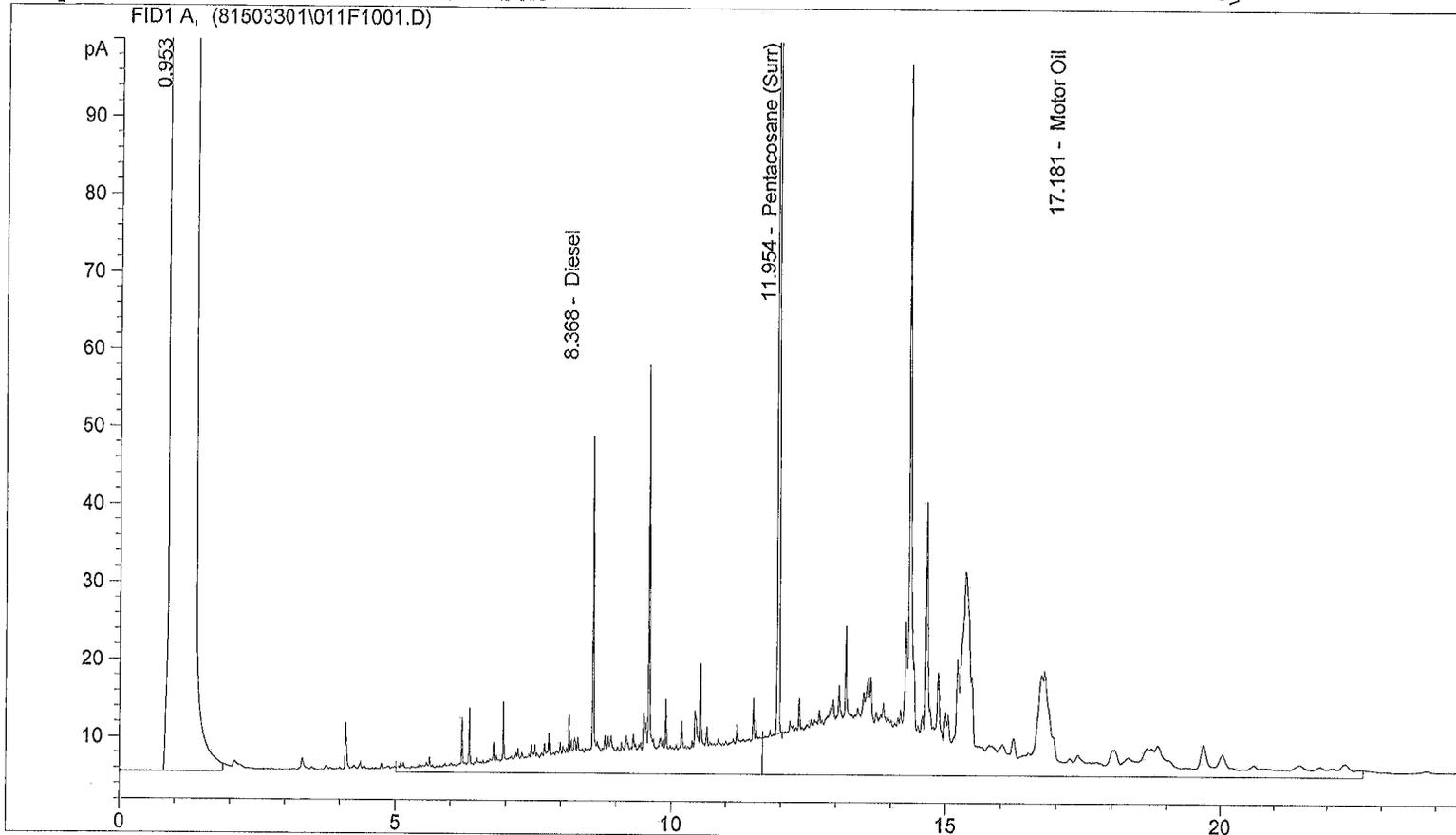
82%

0.310 µg/L

REVIEWED BY *MB*
 DATE *3/31/15*

03.30.15ES

Sample Name: EV15030154-07 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	1291.094	111.470
11.954		Pentacosane (Surr)	1123.624	46.274
17.181		Motor Oil	3107.784	286.191

116/

$D = 111.470 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 220 \text{ ug/L}$ Unidentified Late Diesel Range Product
 (bias high due to Oil Range Product overlap)

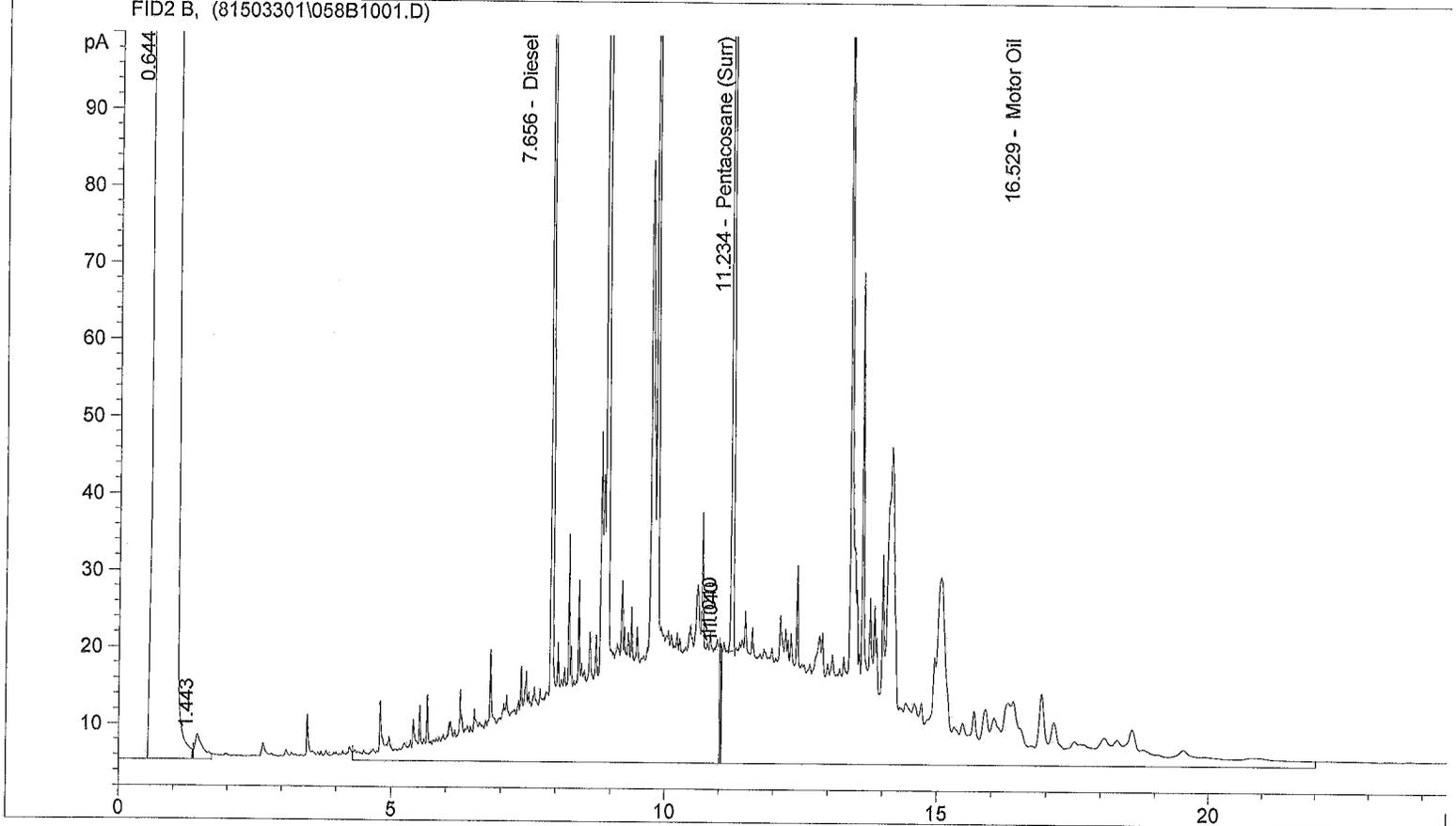
$O = 286.191 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 570 \text{ ug/L}$ Unidentified Oil Range Product

REV. ED BY MS/ E 3/31/15

03.30.15

Sample Name: EV15030154-07 W

FID2 B, (81503301\058B1001.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	6050.157	470.281
11.234		Pentacosane (Surr)	1159.145	41.398
16.529		Motor Oil	4977.030	393.607

103%

$$D = 470.281 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 940 \text{ ug/L} \text{ Unidentified Diesel Range Product}$$

(bias high due to Oil Range Product overlap)

$$O = 393.607 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 790 \text{ ug/L} \text{ Unidentified Oil Range Product}$$

REVIEWED BY *ES*
 DATE *3/31/15*

03.30.15 ES



May 21, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On March 27th, 5 samples were received by our laboratory and assigned our laboratory project number EV15030162. The project was identified as your Closed City of Yakima Landfill / #1148008.030.032. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report is being re-issued to include:

Batch R253814 Blank Spike PCB-1260 result qualifier.

Batch R253789 Method Blank and Blank Spike for TDS added. Note that Blank Spike Duplicates are not part of the TDS method.

Batch R253810 Matrix Spike and Matrix Spike Duplicate Ammonia result qualifier.

Batch R252214 Blank Spike and Blank Spike Duplicate Mercury results.

No other abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
 130 - 2nd Ave. S.
 Edmonds, WA 98020

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

CLIENT SAMPLE ID MW-7-032615

DATE: 5/21/2015
 ALS JOB#: EV15030162
 ALS SAMPLE#: EV15030162-01
 DATE RECEIVED: 03/27/2015
 COLLECTION DATE: 3/26/2015 4:35:00 PM

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/30/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/30/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/30/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	04/02/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	04/02/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	04/02/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	04/02/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	04/02/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	04/02/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	04/02/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	04/02/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	04/02/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	04/02/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	04/02/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-01
CLIENT SAMPLE ID	MW-7-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 4:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	04/02/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	04/02/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	04/02/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	04/02/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	04/02/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	04/02/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-01
CLIENT SAMPLE ID	MW-7-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 4:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	04/01/2015	GAP
Phenanthrene	EPA-8270 SIM	0.015	0.013	1	ug/L	04/01/2015	GAP
Anthracene	EPA-8270 SIM	0.017	0.01	1	ug/L	04/01/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	04/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	04/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	04/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	04/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	04/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	04/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	04/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	04/01/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	04/01/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	04/01/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	04/01/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	ug/L	04/01/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.90	1	ug/L	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-01
CLIENT SAMPLE ID	MW-7-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 4:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	04/01/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	04/01/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	04/01/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	04/01/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Azobenzene	EPA-8270	U	1.6	1	ug/L	04/01/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.81	1	ug/L	04/01/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/27/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1242	EPA-8082	0.026	0.0050	1	ug/L	04/27/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/27/2015	CAS
A-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-01
		DATE RECEIVED:	03/27/2015
CLIENT SAMPLE ID	MW-7-032615	COLLECTION DATE:	3/26/2015 4:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	04/06/2015	CAS
Total Dissolved Solids	SM2540C	210	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	17	0.092	1	MG/L	03/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/27/2015	DNT
Nitrate as N	EPA-300.0	4.1	0.034	1	MG/L	03/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/27/2015	DNT
Sulfate	EPA-300.0	0.67	0.26	1	MG/L	03/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	04/01/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	04/03/2015	RAL
Arsenic	EPA-200.8	2.0	0.45	1	ug/L	03/31/2015	RAL
Barium	EPA-200.8	52	1.0	1	ug/L	03/31/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium	EPA-200.8	33000	100	1	ug/L	03/31/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron	EPA-200.8	17000	50	1	ug/L	03/31/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium	EPA-200.8	12000	50	1	ug/L	03/31/2015	RAL
Manganese	EPA-200.8	1400	2.0	1	ug/L	03/31/2015	RAL
Potassium	EPA-200.8	8500	50	1	ug/L	03/31/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium	EPA-200.8	18000	50	1	ug/L	03/31/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.6	0.45	1	ug/L	03/31/2015	RAL
Barium (Dissolved)	EPA-200.8	52	1.0	1	ug/L	03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-01
CLIENT SAMPLE ID	MW-7-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 4:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium (Dissolved)	EPA-200.8	34000	100	1	ug/L	03/31/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron (Dissolved)	EPA-200.8	17000	50	1	ug/L	03/31/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	ug/L	03/31/2015	RAL
Manganese (Dissolved)	EPA-200.8	1400	2.0	1	ug/L	03/31/2015	RAL
Potassium (Dissolved)	EPA-200.8	8700	50	1	ug/L	03/31/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium (Dissolved)	EPA-200.8	18000	50	1	ug/L	03/31/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	170	0.0	1	MG/L	04/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	170	0.0	1	MG/L	04/02/2015	CAS
Ammonia as N	EPA-350.1	4.1	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.1	0.50	1	MG/L	04/09/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	93.7	03/30/2015	EBS
C25	NWTPH-HCID	76.7	03/30/2015	EBS
C25 (conc)	NWTPH-HCID	72.3	03/30/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	97.5	04/02/2015	DLC
Toluene-d8	EPA-8260	101	04/02/2015	DLC
4-Bromofluorobenzene	EPA-8260	102	04/02/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	78.2	04/01/2015	GAP
Terphenyl-d14	EPA-8270 SIM	112	04/01/2015	GAP
2-Fluorophenol	EPA-8270	48.8	04/01/2015	GAP
Phenol-d5	EPA-8270	30.9	04/01/2015	GAP
Nitrobenzene-d5	EPA-8270	92.1	04/01/2015	GAP
2-Fluorobiphenyl	EPA-8270	89.6	04/01/2015	GAP
2,4,6-Tribromophenol	EPA-8270	117	04/01/2015	GAP
Terphenyl-d14	EPA-8270	109	04/01/2015	GAP
DCB	EPA-8082	99.0	04/27/2015	CAS
TCMX	EPA-8081	69.0	04/06/2015	CAS
DCB	EPA-8081	84.0	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-02
CLIENT SAMPLE ID	MW-9A-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 6:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/30/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/30/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/30/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	04/02/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Chloroform	EPA-8260 SIM	2.5	0.14	1	ug/L	04/02/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	04/02/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	04/02/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	04/02/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	04/02/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	04/02/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	04/02/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	04/02/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	04/02/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	04/02/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	04/02/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-02
CLIENT SAMPLE ID	MW-9A-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 6:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	04/02/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	04/02/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	04/02/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	04/02/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	04/02/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	04/02/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	04/02/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/02/2015	DLC
Naphthalene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	04/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	ug/L	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-02
CLIENT SAMPLE ID	MW-9A-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 6:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	ug/L	04/01/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	ug/L	04/01/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	ug/L	04/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	ug/L	04/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	04/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	ug/L	04/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	ug/L	04/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	ug/L	04/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	ug/L	04/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	ug/L	04/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	ug/L	04/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	ug/L	04/01/2015	GAP
Pyridine	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	04/01/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	04/01/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	04/01/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	ug/L	04/01/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.90	1	ug/L	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-02
CLIENT SAMPLE ID	MW-9A-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 6:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	04/01/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	04/01/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	04/01/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	04/01/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Azobenzene	EPA-8270	U	1.6	1	ug/L	04/01/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.81	1	ug/L	04/01/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
PCB-1016	EPA-8082	U	0.0051	1	ug/L	04/27/2015	CAS
PCB-1221	EPA-8082	U	0.011	1	ug/L	04/27/2015	CAS
PCB-1232	EPA-8082	U	0.0051	1	ug/L	04/27/2015	CAS
PCB-1242	EPA-8082	U	0.0051	1	ug/L	04/27/2015	CAS
PCB-1248	EPA-8082	U	0.0051	1	ug/L	04/27/2015	CAS
PCB-1254	EPA-8082	U	0.0051	1	ug/L	04/27/2015	CAS
PCB-1260	EPA-8082	U	0.0051	1	ug/L	04/27/2015	CAS
A-BHC	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
G-BHC	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
B-BHC	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
D-BHC	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Aldrin	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-02
CLIENT SAMPLE ID	MW-9A-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 6:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Heptachlor Epoxide	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Chlordane	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Endrin	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Endosulfan II	EPA-8081	0.012	0.011	1	ug/L	04/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	ug/L	04/06/2015	CAS
Toxaphene	EPA-8081	U	0.51	1	ug/L	04/06/2015	CAS
Total Dissolved Solids	SM2540C	180	5.0	1	MG/L	04/01/2015	DLC
Chloride	EPA-300.0	12	0.092	1	MG/L	03/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/27/2015	DNT
Nitrate as N	EPA-300.0	2.0	0.034	1	MG/L	03/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/27/2015	DNT
Sulfate	EPA-300.0	11	0.26	1	MG/L	03/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	ug/L	04/01/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	04/03/2015	RAL
Arsenic	EPA-200.8	U	0.45	1	ug/L	03/31/2015	RAL
Barium	EPA-200.8	10	1.0	1	ug/L	03/31/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium	EPA-200.8	26000	100	1	ug/L	03/31/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL
Lead	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium	EPA-200.8	8800	50	1	ug/L	03/31/2015	RAL
Manganese	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Potassium	EPA-200.8	3400	50	1	ug/L	03/31/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium	EPA-200.8	13000	50	1	ug/L	03/31/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	03/31/2015	RAL
Barium (Dissolved)	EPA-200.8	11	1.0	1	ug/L	03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-02
CLIENT SAMPLE ID	MW-9A-032615	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015 6:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium (Dissolved)	EPA-200.8	27000	100	1	ug/L	03/31/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium (Dissolved)	EPA-200.8	9100	50	1	ug/L	03/31/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Potassium (Dissolved)	EPA-200.8	3600	50	1	ug/L	03/31/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium (Dissolved)	EPA-200.8	14000	50	1	ug/L	03/31/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	110	0.0	1	MG/L	04/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	110	0.0	1	MG/L	04/02/2015	CAS
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	04/06/2015	CAS
Total Organic Carbon (TOC)	SM5310C	0.83	0.50	1	MG/L	04/09/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	86.6	03/30/2015	EBS
C25	NWTPH-HCID	69.5	03/30/2015	EBS
C25 (conc)	NWTPH-HCID	75.8	03/30/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	98.9	04/02/2015	DLC
Toluene-d8	EPA-8260	100	04/02/2015	DLC
4-Bromofluorobenzene	EPA-8260	102	04/02/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	78.7	04/01/2015	GAP
Terphenyl-d14	EPA-8270 SIM	125	04/01/2015	GAP
2-Fluorophenol	EPA-8270	48.5	04/01/2015	GAP
Phenol-d5	EPA-8270	30.4	04/01/2015	GAP
Nitrobenzene-d5	EPA-8270	91.8	04/01/2015	GAP
2-Fluorobiphenyl	EPA-8270	90.1	04/01/2015	GAP
2,4,6-Tribromophenol	EPA-8270	112	04/01/2015	GAP
Terphenyl-d14	EPA-8270	110	04/01/2015	GAP
DCB	EPA-8082	92.0	04/27/2015	CAS
TCMX	EPA-8081	74.0	04/06/2015	CAS
DCB	EPA-8081	80.0	04/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-05
CLIENT SAMPLE ID	Trip Blanks	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	04/01/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	04/01/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	04/01/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	04/01/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	04/01/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	04/01/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/01/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	04/01/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/01/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	04/01/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	04/01/2015	DLC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	04/01/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	04/01/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	04/01/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	04/01/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
2-Butanone	EPA-8260	U	10	1	ug/L	04/01/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	04/01/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	04/01/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	04/01/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	04/01/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15030162-05
CLIENT SAMPLE ID	Trip Blanks	DATE RECEIVED:	03/27/2015
		COLLECTION DATE:	3/26/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	EPA-8260	U	10	1	ug/L	04/01/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	04/01/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	04/01/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	04/01/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	04/01/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	04/01/2015	DLC
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	04/01/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	04/01/2015	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	97.6	04/01/2015	DLC
Toluene-d8	EPA-8260	98.3	04/01/2015	DLC
4-Bromofluorobenzene	EPA-8260	101	04/01/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MB-032515W - Batch 91748 - Water by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	130	1	ug/L	03/25/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	310	1	ug/L	03/25/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-033115W - Batch 92033 - Water by EPA-8260 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	ug/L	03/31/2015	DLC
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	ug/L	03/31/2015	DLC
Chloroform	EPA-8260 SIM	U	0.14	1	ug/L	03/31/2015	DLC
Trichloroethene	EPA-8260 SIM	U	0.054	1	ug/L	03/31/2015	DLC
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	ug/L	03/31/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	ug/L	03/31/2015	DLC
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/31/2015	DLC
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	ug/L	03/31/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/31/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	ug/L	03/31/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	ug/L	03/31/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-033115W - Batch 92033 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Chloromethane	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Bromomethane	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Chloroethane	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Acetone	EPA-8260	U	25	1	ug/L	03/31/2015	DLC
1,1-Dichloroethene	EPA-8260	U	0.014	1	ug/L	03/31/2015	DLC
Methylene Chloride	EPA-8260	U	0.68	1	ug/L	03/31/2015	DLC
Acrylonitrile	EPA-8260	U	0.057	1	ug/L	03/31/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-033115W - Batch 92033 - Water by EPA-8260

2-Butanone	EPA-8260	U	10	1	ug/L	03/31/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Bromochloromethane	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
1,2-Dichloroethane	EPA-8260	U	0.014	1	ug/L	03/31/2015	DLC
Benzene	EPA-8260	U	0.028	1	ug/L	03/31/2015	DLC
Dibromomethane	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Bromodichloromethane	EPA-8260	U	0.059	1	ug/L	03/31/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	ug/L	03/31/2015	DLC
Toluene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
2-Hexanone	EPA-8260	U	10	1	ug/L	03/31/2015	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Tetrachloroethylene	EPA-8260	U	0.023	1	ug/L	03/31/2015	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	ug/L	03/31/2015	DLC
Chlorobenzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Ethylbenzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
m,p-Xylene	EPA-8260	U	4.0	1	ug/L	03/31/2015	DLC
Styrene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
o-Xylene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Bromoform	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	ug/L	03/31/2015	DLC
Bromobenzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	ug/L	03/31/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
 130 - 2nd Ave. S.
 Edmonds, WA 98020
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

DATE: 5/21/2015
ALS SDG#: EV15030162
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-033115W - Batch 92033 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Hexachlorobutadiene	EPA-8260	U	0.069	1	ug/L	03/31/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	ug/L	03/31/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-032615W - Batch 91897 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.012	1	ug/L	03/31/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	ug/L	03/31/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.0089	1	ug/L	03/31/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0067	1	ug/L	03/31/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.17	1	ug/L	03/31/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Anthracene	EPA-8270 SIM	U	0.023	1	ug/L	03/31/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.040	1	ug/L	03/31/2015	GAP
Pyrene	EPA-8270 SIM	U	0.035	1	ug/L	03/31/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Chrysene	EPA-8270 SIM	U	0.025	1	ug/L	03/31/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.022	1	ug/L	03/31/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.019	1	ug/L	03/31/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.018	1	ug/L	03/31/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.017	1	ug/L	03/31/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.015	1	ug/L	03/31/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-033015W - Batch 92031 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	ug/L	04/01/2015	GAP
Phenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Aniline	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	ug/L	04/01/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-033015W - Batch 92031 - Water by EPA-8270

Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Hexachloroethane	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Isophorone	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	ug/L	04/01/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	ug/L	04/01/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.90	1	ug/L	04/01/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	ug/L	04/01/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	ug/L	04/01/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	ug/L	04/01/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	ug/L	04/01/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Azobenzene	EPA-8270	U	1.6	1	ug/L	04/01/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Carbazole	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-033015W - Batch 92031 - Water by EPA-8270

Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.81	1	ug/L	04/01/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	ug/L	04/01/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/28/2015 - Batch R253814 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	ug/L	04/28/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	ug/L	04/28/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	ug/L	04/28/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	ug/L	04/28/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	ug/L	04/28/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	ug/L	04/28/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	ug/L	04/28/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/06/2015 - Batch R253812 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
G-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
B-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
D-BHC	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Aldrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Chlordane	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endrin	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	ug/L	04/06/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	ug/L	04/06/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MB1-04/06/2015 - Batch R253812 - Water by EPA-8081

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-254878 - Batch R253789 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	04/01/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-253791 - Batch R253791 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	03/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	03/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	03/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	03/27/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	03/27/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-252214 - Batch R252214 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.11	1	ug/L	04/01/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-253788 - Batch R253788 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.11	1	ug/L	04/03/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-033015W - Batch 91902 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	0.45	1	ug/L	03/31/2015	RAL
Barium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium	EPA-200.8	U	100	1	ug/L	03/31/2015	RAL
Chromium	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15030162
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

LABORATORY BLANK RESULTS

MB-033015W - Batch 91902 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL
Manganese	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Potassium	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL
Selenium	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-033015W - Batch 91903 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	ug/L	03/31/2015	RAL
Barium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	ug/L	03/31/2015	RAL
Calcium (Dissolved)	EPA-200.8	U	100	1	ug/L	03/31/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	ug/L	03/31/2015	RAL
Magnesium (Dissolved)	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	ug/L	03/31/2015	RAL
Potassium (Dissolved)	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	ug/L	03/31/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	ug/L	03/31/2015	RAL
Sodium (Dissolved)	EPA-200.8	U	50	1	ug/L	03/31/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/02/2015 - Batch R253811 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	04/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	04/02/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/06/2015 - Batch R253810 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	04/06/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
		ALS SDG#:	EV15030162
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Jeffrey Fellows		
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032		

LABORATORY BLANK RESULTS

MB1-04/06/2015 - Batch R253810 - Water by EPA-350.1

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-04/09/2015 - Batch R253809 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	04/09/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 92033 - Water by EPA-8260 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Trichloroethene - BS	EPA-8260 SIM	113			03/31/2015	DLC
Trichloroethene - BSD	EPA-8260 SIM	114	1		03/31/2015	DLC

ALS Test Batch ID: 92033 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	109			03/31/2015	DLC
1,1-Dichloroethene - BSD	EPA-8260	109	1		03/31/2015	DLC
Benzene - BS	EPA-8260	104			03/31/2015	DLC
Benzene - BSD	EPA-8260	104	0		03/31/2015	DLC
Toluene - BS	EPA-8260	108			03/31/2015	DLC
Toluene - BSD	EPA-8260	108	0		03/31/2015	DLC
Chlorobenzene - BS	EPA-8260	108			03/31/2015	DLC
Chlorobenzene - BSD	EPA-8260	109	1		03/31/2015	DLC

ALS Test Batch ID: 91897 - Water by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	EPA-8270 SIM	82.8			03/31/2015	GAP
Naphthalene - BSD	EPA-8270 SIM	89.6	8		03/31/2015	GAP
Acenaphthene - BS	EPA-8270 SIM	89.8			03/31/2015	GAP
Acenaphthene - BSD	EPA-8270 SIM	98.6	9		03/31/2015	GAP
Pentachlorophenol - BS	EPA-8270 SIM	71.9			03/31/2015	GAP
Pentachlorophenol - BSD	EPA-8270 SIM	76.4	6		03/31/2015	GAP
Pyrene - BS	EPA-8270 SIM	94.7			03/31/2015	GAP
Pyrene - BSD	EPA-8270 SIM	110	15		03/31/2015	GAP
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	96.0			03/31/2015	GAP
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	103	7		03/31/2015	GAP

ALS Test Batch ID: 92031 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	38.7			04/01/2015	GAP
Phenol - BSD	EPA-8270	38.1	2		04/01/2015	GAP
2-Chlorophenol - BS	EPA-8270	96.5			04/01/2015	GAP
2-Chlorophenol - BSD	EPA-8270	94.7	2		04/01/2015	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	184		SQ1	04/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	177	4	SQ1	04/01/2015	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	107			04/01/2015	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	103	4		04/01/2015	GAP
4-Nitrophenol - BS	EPA-8270	26.1			04/01/2015	GAP
4-Nitrophenol - BSD	EPA-8270	30.0	14		04/01/2015	GAP
2,4-Dinitrotoluene - BS	EPA-8270	91.0			04/01/2015	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	91.3	0		04/01/2015	GAP
Pyrene - BS	EPA-8270	116			04/01/2015	GAP
Pyrene - BSD	EPA-8270	118	2		04/01/2015	GAP

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

ALS Test Batch ID: R253814 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	90.5			04/28/2015	CAS
PCB-1016 - BSD	EPA-8082	95.0	5		04/27/2015	CAS
PCB-1260 - BS	EPA-8082	108		SQ1	04/28/2015	CAS
PCB-1260 - BSD	EPA-8082	97.5	10		04/27/2015	CAS

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

ALS Test Batch ID: R253812 - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	87.5			04/06/2015	CAS
A-BHC - BSD	EPA-8081	81.5	7		04/06/2015	CAS
G-BHC - BS	EPA-8081	87.0			04/06/2015	CAS
G-BHC - BSD	EPA-8081	81.5	7		04/06/2015	CAS
B-BHC - BS	EPA-8081	88.5			04/06/2015	CAS
B-BHC - BSD	EPA-8081	84.0	5		04/06/2015	CAS
Heptachlor - BS	EPA-8081	82.0			04/06/2015	CAS
Heptachlor - BSD	EPA-8081	76.5	7		04/06/2015	CAS
D-BHC - BS	EPA-8081	89.0			04/06/2015	CAS
D-BHC - BSD	EPA-8081	83.5	6		04/06/2015	CAS
Aldrin - BS	EPA-8081	78.0			04/06/2015	CAS
Aldrin - BSD	EPA-8081	71.5	9		04/06/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	86.0			04/06/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	80.5	7		04/06/2015	CAS
Chlordane - BS	EPA-8081	83.5			04/06/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15030162
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chlordane - BSD	EPA-8081	78.0	7		04/06/2015	CAS
Endosulfan I - BS	EPA-8081	59.0			04/06/2015	CAS
Endosulfan I - BSD	EPA-8081	56.0	5		04/06/2015	CAS
4,4'-DDE - BS	EPA-8081	84.0			04/06/2015	CAS
4,4'-DDE - BSD	EPA-8081	79.0	6		04/06/2015	CAS
Dieldrin - BS	EPA-8081	87.0			04/06/2015	CAS
Dieldrin - BSD	EPA-8081	82.0	6		04/06/2015	CAS
Endrin - BS	EPA-8081	90.0			04/06/2015	CAS
Endrin - BSD	EPA-8081	84.0	7		04/06/2015	CAS
4,4'-DDD - BS	EPA-8081	86.5			04/06/2015	CAS
4,4'-DDD - BSD	EPA-8081	80.0	8		04/06/2015	CAS
Endosulfan II - BS	EPA-8081	66.0			04/06/2015	CAS
Endosulfan II - BSD	EPA-8081	62.0	6		04/06/2015	CAS
4,4'-DDT - BS	EPA-8081	84.0			04/06/2015	CAS
4,4'-DDT - BSD	EPA-8081	75.5	11		04/06/2015	CAS
Endrin Aldehyde - BS	EPA-8081	81.0			04/06/2015	CAS
Endrin Aldehyde - BSD	EPA-8081	75.5	7		04/06/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	85.5			04/06/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	80.0	7		04/06/2015	CAS
Methoxychlor - BS	EPA-8081	87.5			04/06/2015	CAS
Methoxychlor - BSD	EPA-8081	78.5	11		04/06/2015	CAS
Hexachlorobenzene - BS	EPA-8081	83.5			04/06/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	79.0	6		04/06/2015	CAS
Toxaphene - BS	EPA-8081	102			04/06/2015	CAS
Toxaphene - BSD	EPA-8081	108	6		04/06/2015	CAS

ALS Test Batch ID: R253789 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	85.0			04/01/2015	DLC

ALS Test Batch ID: R253791 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	96.0			03/27/2015	DNT
Chloride - BSD	EPA-300.0	94.0	2		03/27/2015	DNT
Fluoride - BS	EPA-300.0	99.0			03/27/2015	DNT
Fluoride - BSD	EPA-300.0	108	9		03/27/2015	DNT



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015 ALS SDG#: EV15030162 WDOE ACCREDITATION: C601
CLIENT CONTACT:	Jeffrey Fellows	
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Nitrate as N - BS	EPA-300.0	103			03/27/2015	DNT
Nitrate as N - BSD	EPA-300.0	101	2		03/27/2015	DNT
Nitrite as N - BS	EPA-300.0	97.0			03/27/2015	DNT
Nitrite as N - BSD	EPA-300.0	93.0	4		03/27/2015	DNT
Sulfate - BS	EPA-300.0	107			03/27/2015	DNT
Sulfate - BSD	EPA-300.0	98.0	9		03/27/2015	DNT

ALS Test Batch ID: R252214 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	92.0			04/01/2015	RAL
Mercury - BSD	EPA-7470	97.0	5		04/01/2015	RAL

ALS Test Batch ID: R253788 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	103			04/03/2015	RAL
Mercury (Dissolved) - BSD	EPA-7470	103	0		04/03/2015	RAL

ALS Test Batch ID: 91902 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	103			03/31/2015	RAL
Arsenic - BSD	EPA-200.8	102	0		03/31/2015	RAL
Barium - BS	EPA-200.8	107			03/31/2015	RAL
Barium - BSD	EPA-200.8	105	2		03/31/2015	RAL
Cadmium - BS	EPA-200.8	106			03/31/2015	RAL
Cadmium - BSD	EPA-200.8	105	2		03/31/2015	RAL
Calcium - BS	EPA-200.8	105			03/31/2015	RAL
Calcium - BSD	EPA-200.8	103	2		03/31/2015	RAL
Chromium - BS	EPA-200.8	104			03/31/2015	RAL
Chromium - BSD	EPA-200.8	104	0		03/31/2015	RAL
Iron - BS	EPA-200.8	105			03/31/2015	RAL
Iron - BSD	EPA-200.8	104	1		03/31/2015	RAL
Lead - BS	EPA-200.8	105			03/31/2015	RAL
Lead - BSD	EPA-200.8	105	0		03/31/2015	RAL
Magnesium - BS	EPA-200.8	105			03/31/2015	RAL
Magnesium - BSD	EPA-200.8	104	1		03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
 130 - 2nd Ave. S.
 Edmonds, WA 98020

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Closed City of Yakima Landfill /
 #1148008.030.032

DATE: 5/21/2015
 ALS SDG#: EV15030162
 WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Manganese - BS	EPA-200.8	104			03/31/2015	RAL
Manganese - BSD	EPA-200.8	104	0		03/31/2015	RAL
Potassium - BS	EPA-200.8	105			03/31/2015	RAL
Potassium - BSD	EPA-200.8	104	1		03/31/2015	RAL
Selenium - BS	EPA-200.8	104			03/31/2015	RAL
Selenium - BSD	EPA-200.8	103	1		03/31/2015	RAL
Silver - BS	EPA-200.8	106			03/31/2015	RAL
Silver - BSD	EPA-200.8	105	1		03/31/2015	RAL
Sodium - BS	EPA-200.8	104			03/31/2015	RAL
Sodium - BSD	EPA-200.8	103	1		03/31/2015	RAL

ALS Test Batch ID: 91903 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	103			03/31/2015	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	102	0		03/31/2015	RAL
Barium (Dissolved) - BS	EPA-200.8	107			03/31/2015	RAL
Barium (Dissolved) - BSD	EPA-200.8	105	2		03/31/2015	RAL
Cadmium (Dissolved) - BS	EPA-200.8	106			03/31/2015	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	105	2		03/31/2015	RAL
Calcium (Dissolved) - BS	EPA-200.8	105			03/31/2015	RAL
Calcium (Dissolved) - BSD	EPA-200.8	103	2		03/31/2015	RAL
Chromium (Dissolved) - BS	EPA-200.8	104			03/31/2015	RAL
Chromium (Dissolved) - BSD	EPA-200.8	104	0		03/31/2015	RAL
Iron (Dissolved) - BS	EPA-200.8	105			03/31/2015	RAL
Iron (Dissolved) - BSD	EPA-200.8	104	1		03/31/2015	RAL
Lead (Dissolved) - BS	EPA-200.8	105			03/31/2015	RAL
Lead (Dissolved) - BSD	EPA-200.8	105	0		03/31/2015	RAL
Magnesium (Dissolved) - BS	EPA-200.8	105			03/31/2015	RAL
Magnesium (Dissolved) - BSD	EPA-200.8	104	1		03/31/2015	RAL
Manganese (Dissolved) - BS	EPA-200.8	104			03/31/2015	RAL
Manganese (Dissolved) - BSD	EPA-200.8	104	0		03/31/2015	RAL
Potassium (Dissolved) - BS	EPA-200.8	105			03/31/2015	RAL
Potassium (Dissolved) - BSD	EPA-200.8	104	1		03/31/2015	RAL
Selenium (Dissolved) - BS	EPA-200.8	104			03/31/2015	RAL
Selenium (Dissolved) - BSD	EPA-200.8	103	1		03/31/2015	RAL
Silver (Dissolved) - BS	EPA-200.8	106			03/31/2015	RAL
Silver (Dissolved) - BSD	EPA-200.8	105	1		03/31/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 5/21/2015 ALS SDG#: EV15030162 WDOE ACCREDITATION: C601
CLIENT CONTACT:	Jeffrey Fellows	
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032	

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Sodium (Dissolved) - BS	EPA-200.8	104			03/31/2015	RAL
Sodium (Dissolved) - BSD	EPA-200.8	103	1		03/31/2015	RAL

ALS Test Batch ID: R253811 - Water by SM2320B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total - BS	SM2320B	105			04/02/2015	CAS

ALS Test Batch ID: R253810 - Water by EPA-350.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N 5X Dilution - BS	EPA-350.1	97.4			04/06/2015	CAS

ALS Test Batch ID: R253809 - Water by SM5310C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - BS	SM5310C	95.5			04/09/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/21/2015
		ALS SDG#:	EV15030162
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Jeffrey Fellows		
CLIENT PROJECT:	Closed City of Yakima Landfill / #1148008.030.032		

MATRIX SPIKE RESULTS

ALS Test Batch ID: R253809 - Water

Parent Sample: MW-7-032615

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - MS	SM5310C	4.1	25.0	27.9		95.4		04/09/2015	CAS

ALS Test Batch ID: R253810 - Water

Parent Sample: MW-7-032615

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N 5X Dilution - MS	EPA-350.1	4.1	10.0	16.1		120	SQ2	04/06/2015	CAS
Ammonia as N 5X Dilution - MSD	EPA-350.1	4.1	10.0	16.0	1	119	SQ2	04/06/2015	CAS

SQ2 - Spike outside of control limits due to matrix effect.

APPROVED BY



Laboratory Director



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080
- _____

Chain-of-Custody Record

EV15030162

Date 3/27/15
Page 1 of 2

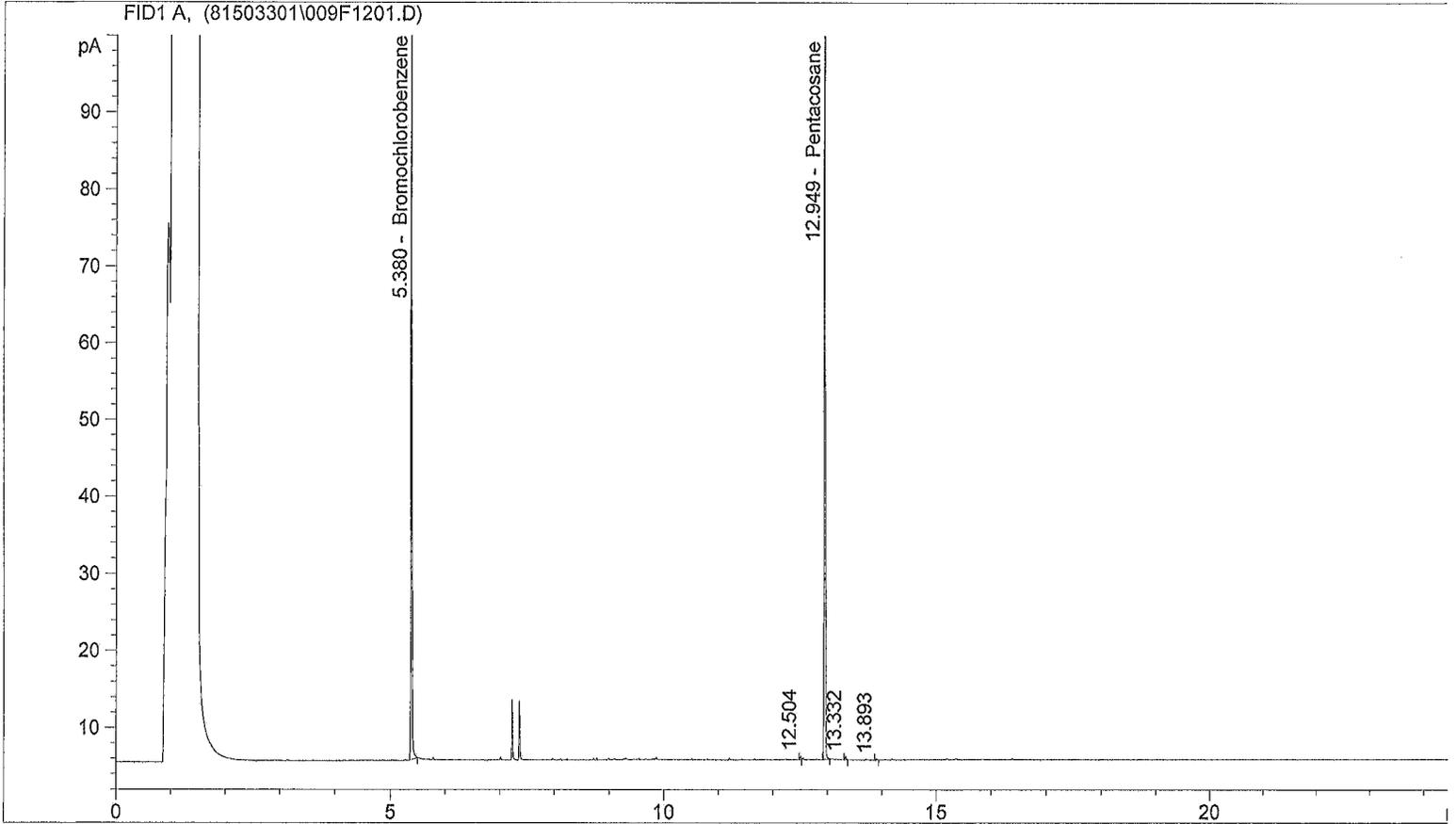
Project Name <u>Closed City of Yakima Landfill</u> Project No. <u>1148008.030.032</u>					Testing Parameters										Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____		
Project Location/Event <u>Closed Yakima Landfill, WA/3rd Quarter GW</u>					<div style="display: flex; justify-content: space-around; font-size: small;"> Metals (Total) * Metals (Dissolved) * Mercury (Total) * Mercury (Dissolved) Chlorinated Pesticides PCB's VOC's SVOC's PAH's TPH-HCID TPH-Dx * TPH-G </div>												
Sampler's Name <u>Stephanie Renando, Shane Kostka</u>																	
Project Contact <u>Jeffrey Fellows</u>																	
Send Results To <u>J. Fellows, A. Halvorsen, K. Schultz</u>																	
Sample I.D.	Date	Time	Matrix	No. of Containers	Metals (Total) *	Metals (Dissolved) *	Mercury (Total) *	Mercury (Dissolved)	Chlorinated Pesticides	PCB's	VOC's	SVOC's	PAH's	TPH-HCID	TPH-Dx *	TPH-G	Observations/Comments
1 MW-7-032615	3/26/15	1635	AQ	14	X	X	X	X	X	X	X	X	X	X	X	X	X. Allow water samples to settle, collect aliquot from clear portion
2 MW-9A-032615	3/26/15	1815	AQ	14	X	X	X	X	X	X	X	X	X	X	X	X	
3 MW-103-032615	3/26/15	1750	AQ	1													NWTPH-Dx - run acid wash silica gel cleanup
4 MW-105-032615	3/26/15	1820	AQ	2													
5 Trip Blanks	3/26/15	—	AQ	2						X							Analyze for EPH if no specific product identified
<p>Note: Samples for dissolved analytes were field filtered.</p>																	
<p>VOC/BTEX/VPH (soil):</p> <p>— non-preserved</p> <p>— preserved w/methanol</p> <p>— preserved w/sodium bisulfate</p> <p>— Freeze upon receipt</p> <p>— Dissolved metal water samples field filtered</p> <p>Other <u>*As, Ba, Ca, Cd, Cr, Fe, K, Pb, Mg, Mn, Na, Se, Ag</u></p> <p><u>*Run w/ AND w/out Silica gel cleanup</u></p> <p><u>O=Hold pending HCID result.</u></p>																	

Special Shipment/Handling or Storage Requirements <u>on ice</u>	Method of Shipment <u>Delivery</u>
-----------------------------------------------------------------	------------------------------------

Relinquished by Signature <u>[Signature]</u> Printed Name <u>Stephanie Renando</u> Company <u>Landau Associates</u> Date <u>3/27/15</u> Time <u>1500</u>	Received by Signature <u>[Signature]</u> Printed Name <u>Rick Bryan</u> Company <u>ALS</u> Date <u>3/27/15</u> Time <u>3:00</u>	Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____	Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____
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Instrument #81 Data File: C:\HPCHEM\1\DATA\81503301\009F1201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCLDW.M
 Injection Date & Time: 3/30/2015 3:51:12 PM 3/30/2015 3:51:12 PM
 Report Creation: 3/30/2015 4:50:17 PM

Sample Name: EV15030162-01 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	135.383	23.422
12.949		Pentacosane	151.000	7.666

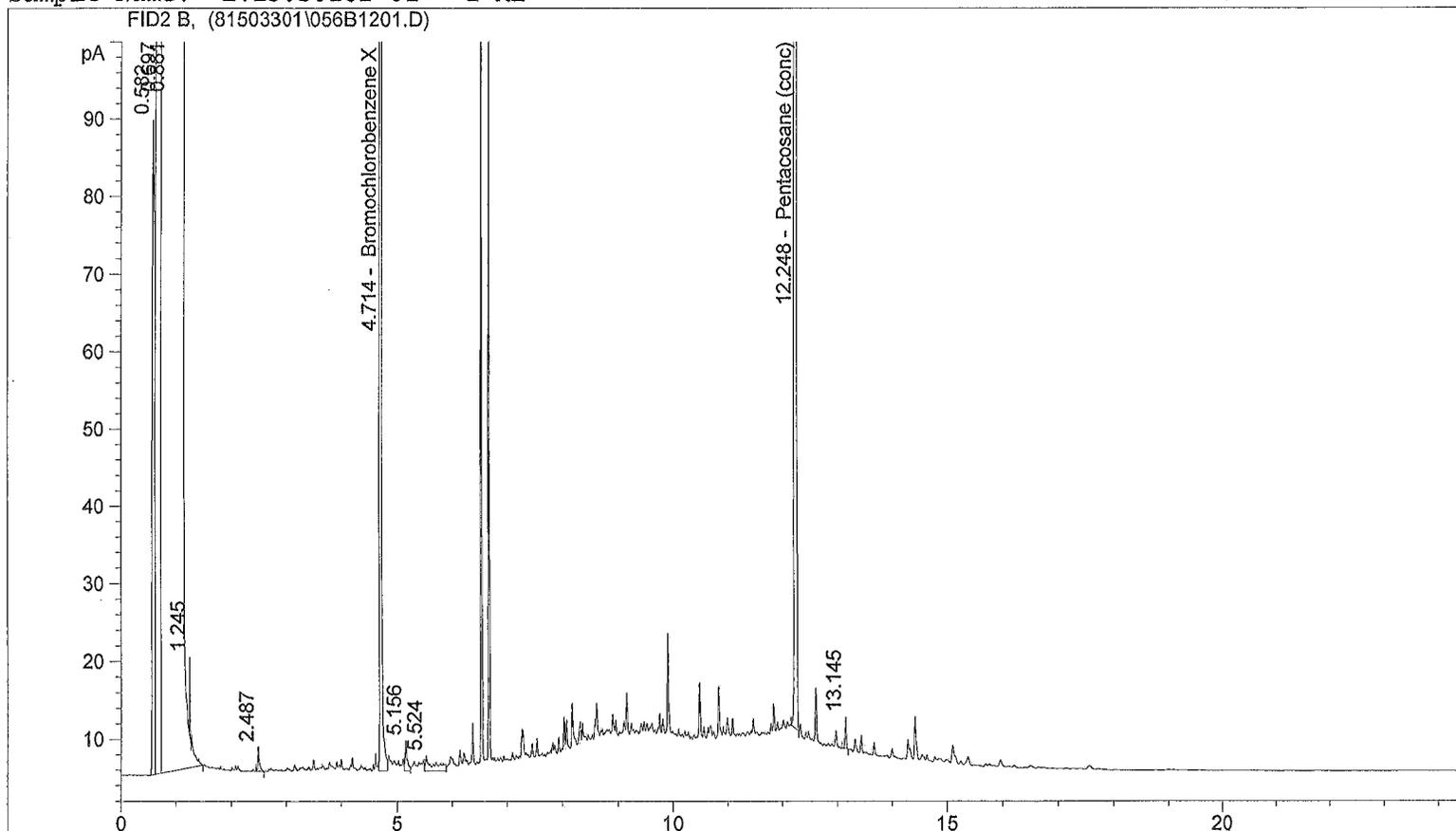
94%
77%

G < 130 ug/L
D < 310 ug/L

REVIEWED BY *MB*
 & DATE *4/15/15*

03.30.15E

Sample Name: EV15030162-01 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.714	FID2 B,	Bromochlorobenzene X	2592.868	201.881
12.248		Pentacosane (conc)	2783.813	72.253

72/

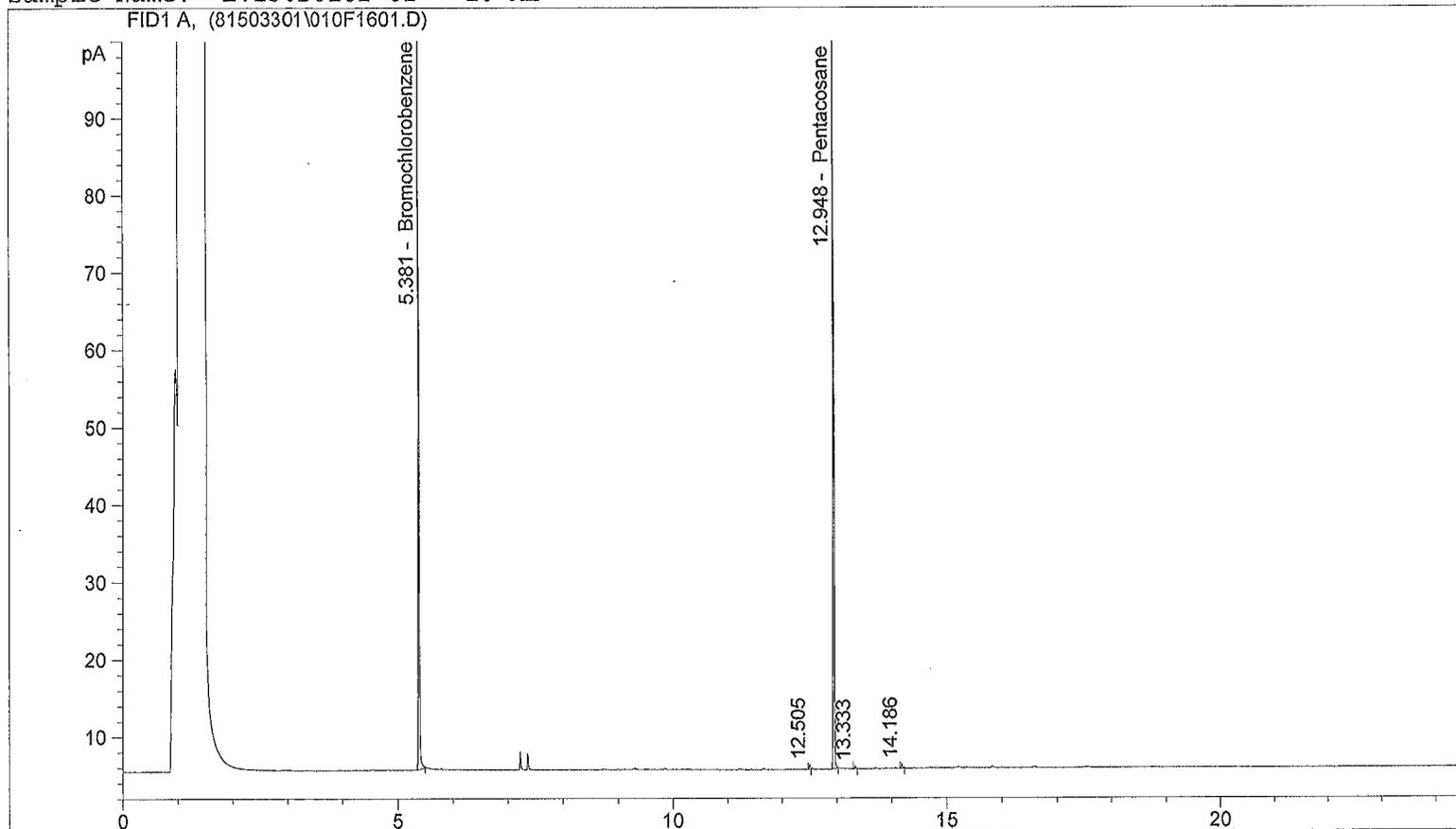
0 < 310 ug/L

REVIEWED BY *MB*
 & DATE 4/15/15

03.30.15EJ

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503301\010F1601.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 3/30/2015 5:57:30 PM 3/30/2015 5:57:30 PM
 Report Creation: 3/31/2015 10:17:12 AM

Sample Name: EV15030162-02 10 ML ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.381	FID1 A,	Bromochlorobenzene	125.197	21.660
12.948		Pentacosane	136.973	6.954

87%
70%

G < 130 ug/L
 D < 310 ug/L

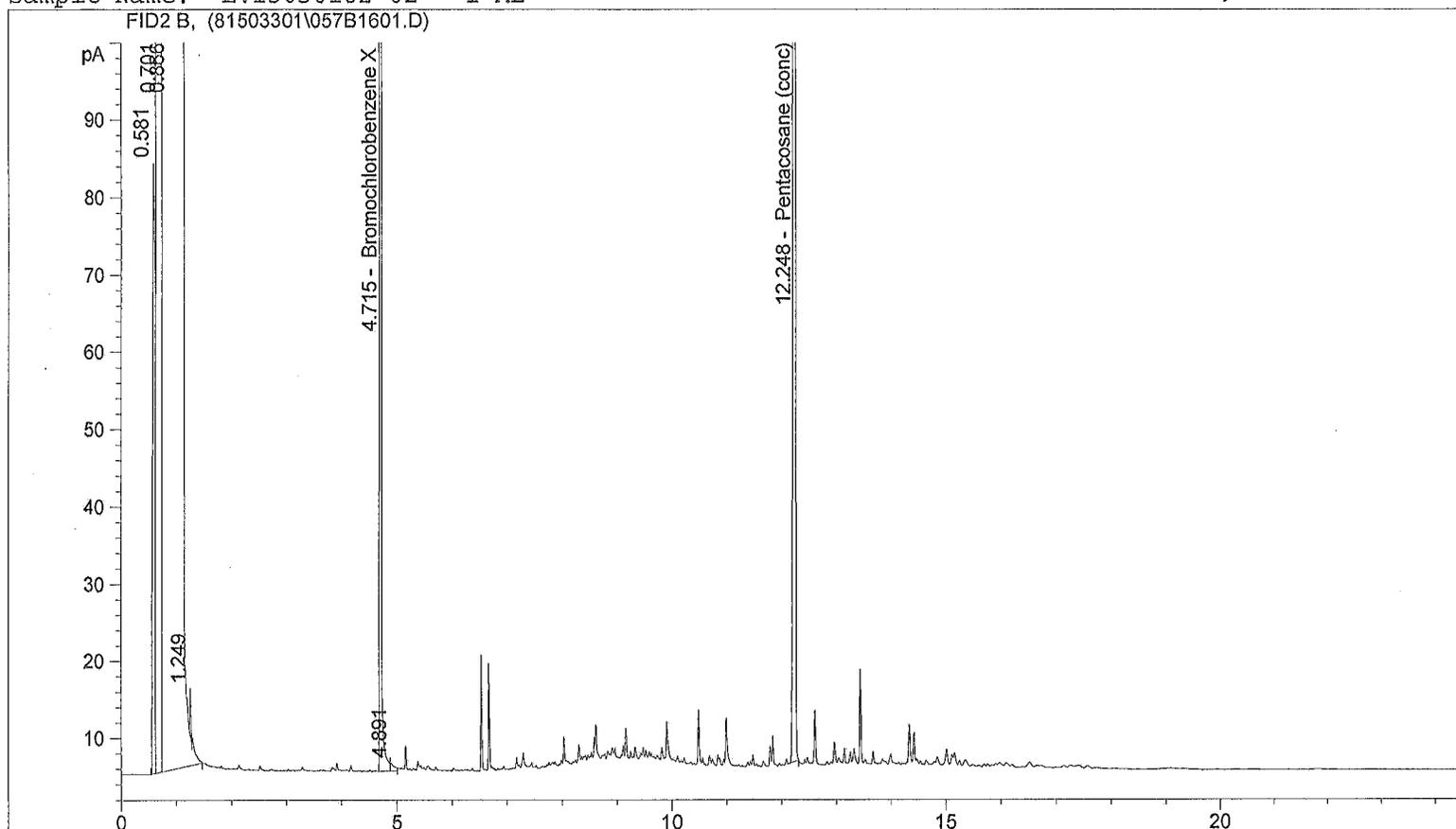
REVIEWED BY *MB*
 & DATE 3/15/15

03.31.15 ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81503301\057B1601.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 3/30/2015 5:57:30 PM 3/30/2015 5:57:30 PM
 Report Creation: 3/31/2015 10:17:33 AM

Sample Name: EV15030162-02 1 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.715	FID2 B,	Bromochlorobenzene X	2715.320	211.415
12.248		Pentacosane (conc)	2922.118	75.842

76%

0 < 310 µg/L

REVIEWED BY *AS*
 & DATE 4/5/15

03-31-15



August 10, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On April 27th, 5 samples were received by our laboratory and assigned our laboratory project number EV15040134. The project was identified as your Yakima Landfill / #1148008.030. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report is being re-issued with lowered reporting limits for Chloroform and Pentachlorophenol. No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS JOB#: EV15040134
Edmonds, WA 98020 ALS SAMPLE#: EV15040134-01
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 04/27/2015
CLIENT PROJECT: Yakima Landfill / #1148008.030 COLLECTION DATE: 4/22/2015 11:45:00 AM
CLIENT SAMPLE ID GP-31(6.5-7.5)-04222015 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	04/29/2015	DLC
Pentachlorophenol	EPA-8270 SIM	U	49	1	UG/KG	04/28/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	8/10/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-02
CLIENT SAMPLE ID	GP-27(5.5-6.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 8:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	04/29/2015	DLC
Pentachlorophenol	EPA-8270 SIM	U	47	1	UG/KG	04/28/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	8/10/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-03
CLIENT SAMPLE ID	GP-28(6.5-7.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	04/29/2015	DLC
Pentachlorophenol	EPA-8270 SIM	U	47	1	UG/KG	04/28/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	8/10/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-04
CLIENT SAMPLE ID	GP-29(8.0-9.0)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 1:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloroform	EPA-8260	U	8.0	1	UG/KG	04/29/2015	DLC
Pentachlorophenol	EPA-8270 SIM	U	43	1	UG/KG	04/28/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS JOB#: EV15040134
Edmonds, WA 98020 ALS SAMPLE#: EV15040134-05
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 04/27/2015
CLIENT PROJECT: Yakima Landfill / #1148008.030 COLLECTION DATE: 4/24/2015 8:45:00 AM
CLIENT SAMPLE ID GP-30(8.0-8.5)-04242015 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pentachlorophenol	EPA-8270 SIM	U	45	1	UG/KG	04/28/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS SDG#: EV15040134
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.030

LABORATORY BLANK RESULTS

MB-042915S - Batch 93041 - Soil by EPA-8260

Table with 7 columns: ANALYTE, METHOD, RESULTS, QUAL, UNITS, REPORTING LIMITS, ANALYSIS DATE, ANALYSIS BY. Row 1: Chloroform, EPA-8260, U, UG/KG, 8.0, 04/29/2015, DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-042715S - Batch 92868 - Soil by EPA-8270 SIM

Table with 7 columns: ANALYTE, METHOD, RESULTS, QUAL, UNITS, REPORTING LIMITS, ANALYSIS DATE, ANALYSIS BY. Row 1: Pentachlorophenol, EPA-8270 SIM, U, UG/KG, 77, 04/28/2015, GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 8/10/2015
130 - 2nd Ave. S. ALS SDG#: EV15040134
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.030

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 93041 - Soil by EPA-8260

Table with 7 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows include 1,1-Dichloroethene - BS, Benzene - BS, Toluene - BS, Chlorobenzene - BS, etc.

ALS Test Batch ID: 92868 - Soil by EPA-8270 SIM

Table with 7 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows include Naphthalene - BS, Acenaphthene - BS, Pyrene - BS, Benzo[G,H,I]Perylene - BS, etc.

APPROVED BY

Handwritten signature of Paul Bagum

Laboratory Director



June 17, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On April 27th, 5 samples were received by our laboratory and assigned our laboratory project number EV15040134. The project was identified as your Yakima Landfill / #1148008.030. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
 130 - 2nd Ave. S.
 Edmonds, WA 98020

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030
 CLIENT SAMPLE ID: GP-31(6.5-7.5)-04222015

DATE: 6/17/2015
 ALS JOB#: EV15040134
 ALS SAMPLE#: EV15040134-01
 DATE RECEIVED: 04/27/2015
 COLLECTION DATE: 4/22/2015 11:45:00 AM
 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	04/27/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	04/27/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	04/27/2015	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Vinyl Chloride	EPA-8260	U	0.038	1	UG/KG	04/29/2015	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Acetone	EPA-8260	52	50	1	UG/KG	04/29/2015	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	04/29/2015	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	04/29/2015	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromodichloromethane	EPA-8260	U	0.91	1	UG/KG	04/29/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Toluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.97	1	UG/KG	04/29/2015	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-01
CLIENT SAMPLE ID	GP-31(6.5-7.5)-04222015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/22/2015 11:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	04/29/2015	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	04/29/2015	DLC
Styrene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	1.0	1	UG/KG	04/29/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	1.1	1	UG/KG	04/29/2015	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	100	1	UG/KG	04/28/2015	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-01
CLIENT SAMPLE ID	GP-31(6.5-7.5)-04222015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/22/2015 11:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pyridine	EPA-8270	U	200	1	UG/KG	04/29/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	32	1	UG/KG	04/29/2015	GAP
Phenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Aniline	EPA-8270	U	55	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	110	1	UG/KG	04/29/2015	GAP
2-Chlorophenol	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Benzyl Alcohol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
3&4-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Hexachloroethane	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Nitrobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Isophorone	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Nitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Benzoic Acid	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	290	1	UG/KG	04/29/2015	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Chloroaniline	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	UG/KG	04/29/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	47	1	UG/KG	04/29/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-01
CLIENT SAMPLE ID	GP-31(6.5-7.5)-04222015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/22/2015 11:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Nitroaniline	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Dimethylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	44	1	UG/KG	04/29/2015	GAP
3-Nitroaniline	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Nitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Dibenzofuran	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Diethylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Nitroaniline	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Azobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Carbazole	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	200	1	UG/KG	04/29/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
PCB-1016	EPA-8082	U	0.0060	1	MG/KG	05/11/2015	CAS
PCB-1221	EPA-8082	U	0.012	1	MG/KG	05/11/2015	CAS
PCB-1232	EPA-8082	U	0.0060	1	MG/KG	05/11/2015	CAS
PCB-1242	EPA-8082	U	0.0060	1	MG/KG	05/11/2015	CAS
PCB-1248	EPA-8082	U	0.0060	1	MG/KG	05/11/2015	CAS
PCB-1254	EPA-8082	U	0.0060	1	MG/KG	05/11/2015	CAS
PCB-1260	EPA-8082	U	0.0060	1	MG/KG	05/11/2015	CAS
A-BHC	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
G-BHC	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
B-BHC	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
Heptachlor	EPA-8081	U	0.00083	1	MG/KG	05/11/2015	CAS
D-BHC	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
Aldrin	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
Chlordane	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
Endosulfan I	EPA-8081	U	0.0017	1	MG/KG	05/11/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-01
CLIENT SAMPLE ID	GP-31(6.5-7.5)-04222015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/22/2015 11:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4,4'-DDE	EPA-8081	U	0.0016	1	MG/KG	05/11/2015	CAS
Dieldrin	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
Endrin	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
4,4'-DDD	EPA-8081	U	0.0010	1	MG/KG	05/11/2015	CAS
Endosulfan II	EPA-8081	U	0.00086	1	MG/KG	05/11/2015	CAS
4,4'-DDT	EPA-8081	U	0.00085	1	MG/KG	05/11/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.0014	1	MG/KG	05/11/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
Methoxychlor	EPA-8081	U	0.00061	1	MG/KG	05/11/2015	CAS
Toxaphene	EPA-8081	U	0.037	1	MG/KG	05/11/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
pH	EPA-9045	7.58	± 0.01	1	S.U.	04/29/2015	SMR
Fluoride	EPA-300.0M	U	0.16	1	MG/KG	05/04/2015	DNT
Nitrate as N	EPA-300.0M	1.7	0.34	1	MG/KG	05/04/2015	DNT
Nitrite as N	EPA-300.0M	U	0.43	1	MG/KG	05/04/2015	DNT
Mercury	EPA-7471	0.058	0.0041	1	MG/KG	04/28/2015	RAL
Arsenic	EPA-6020	2.0	0.88	5	MG/KG	05/04/2015	RAL
Barium	EPA-6020	74	0.17	5	MG/KG	05/04/2015	RAL
Cadmium	EPA-6020	U	0.27	5	MG/KG	05/04/2015	RAL
Chromium	EPA-6020	14	0.45	5	MG/KG	05/04/2015	RAL
Iron	EPA-6020	22000	50	5	MG/KG	05/04/2015	RAL
Lead	EPA-6020	5.1	0.28	5	MG/KG	05/04/2015	RAL
Manganese	EPA-6020	270	0.35	5	MG/KG	05/04/2015	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	05/04/2015	RAL
Silver	EPA-6020	U	0.28	5	MG/KG	05/04/2015	RAL
Sodium	EPA-6020	540	50	5	MG/KG	05/04/2015	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	66.7	04/27/2015	EBS
C25	NWTPH-HCID	65.7	04/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	143	04/29/2015	DLC
Toluene-d8	EPA-8260	88.6	04/29/2015	DLC
4-Bromofluorobenzene	EPA-8260	97.2	04/29/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	93.4	04/28/2015	GAP
Terphenyl-d14	EPA-8270 SIM	85.2	04/28/2015	GAP
2-Fluorophenol	EPA-8270	101	04/29/2015	GAP
Phenol-d5	EPA-8270	103	04/29/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 6/17/2015
130 - 2nd Ave. S. ALS JOB#: EV15040134
Edmonds, WA 98020 ALS SAMPLE#: EV15040134-01
CLIENT CONTACT: Jeffrey Fellows DATE RECEIVED: 04/27/2015
CLIENT PROJECT: Yakima Landfill / #1148008.030 COLLECTION DATE: 4/22/2015 11:45:00 AM
CLIENT SAMPLE ID GP-31(6.5-7.5)-04222015 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
Nitrobenzene-d5	EPA-8270	97.1	04/29/2015	GAP
2-Fluorobiphenyl	EPA-8270	110	04/29/2015	GAP
2,4,6-Tribromophenol	EPA-8270	118	04/29/2015	GAP
Terphenyl-d14	EPA-8270	118	04/29/2015	GAP
DCB	EPA-8082	93.0	05/11/2015	CAS
TCMX	EPA-8081	67.0	05/11/2015	CAS
DCB	EPA-8081	76.0	05/11/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-02
CLIENT SAMPLE ID	GP-27(5.5-6.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 8:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	04/28/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	04/28/2015	EBS
HCID-Oil Range	NWTPH-HCID	>100	100	1	MG/KG	04/28/2015	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	04/29/2015	EBS
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	04/29/2015	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	150	50	1	MG/KG	04/29/2015	EBS
TPH-Oil Range	NWTPH-DX	280	50	1	MG/KG	04/29/2015	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Vinyl Chloride	EPA-8260	U	0.048	1	UG/KG	04/29/2015	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Acetone	EPA-8260	280	120	1	UG/KG	04/30/2015	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	04/29/2015	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	04/29/2015	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromodichloromethane	EPA-8260	U	1.2	1	UG/KG	04/29/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Toluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-02
CLIENT SAMPLE ID	GP-27(5.5-6.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 8:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,2-Trichloroethane	EPA-8260	U	1.2	1	UG/KG	04/29/2015	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	04/29/2015	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	04/29/2015	DLC
Styrene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	1.3	1	UG/KG	04/29/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	1.3	1	UG/KG	04/29/2015	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-02
CLIENT SAMPLE ID	GP-27(5.5-6.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 8:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	100	1	UG/KG	04/28/2015	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pyridine	EPA-8270	U	200	1	UG/KG	04/29/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	30	1	UG/KG	04/29/2015	GAP
Phenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Aniline	EPA-8270	U	52	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	110	1	UG/KG	04/29/2015	GAP
2-Chlorophenol	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Benzyl Alcohol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
3&4-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Hexachloroethane	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Nitrobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Isophorone	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Nitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Benzoic Acid	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	280	1	UG/KG	04/29/2015	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Chloroaniline	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	UG/KG	04/29/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-02
CLIENT SAMPLE ID	GP-27(5.5-6.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 8:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Hexachlorocyclopentadiene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	45	1	UG/KG	04/29/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Nitroaniline	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Dimethylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	42	1	UG/KG	04/29/2015	GAP
3-Nitroaniline	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Nitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Dibenzofuran	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Diethylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Nitroaniline	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Azobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Carbazole	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	190	1	UG/KG	04/29/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
PCB-1016	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1221	EPA-8082	U	0.011	1	MG/KG	05/11/2015	CAS
PCB-1232	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1242	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1248	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1254	EPA-8082	0.0099	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1260	EPA-8082	0.0057	0.0054	1	MG/KG	05/11/2015	CAS
A-BHC	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
G-BHC	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
B-BHC	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
Heptachlor	EPA-8081	U	0.00083	1	MG/KG	05/11/2015	CAS
D-BHC	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-02
CLIENT SAMPLE ID	GP-27(5.5-6.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 8:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Aldrin	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
Chlordane	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
Endosulfan I	EPA-8081	U	0.0017	1	MG/KG	05/11/2015	CAS
4,4'-DDE	EPA-8081	0.0030	0.0016	1	MG/KG	05/11/2015	CAS
Dieldrin	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
Endrin	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
4,4'-DDD	EPA-8081	U	0.0010	1	MG/KG	05/11/2015	CAS
Endosulfan II	EPA-8081	U	0.00086	1	MG/KG	05/11/2015	CAS
4,4'-DDT	EPA-8081	0.0019	0.00085	1	MG/KG	05/11/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.0014	1	MG/KG	05/11/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.00057	1	MG/KG	05/11/2015	CAS
Methoxychlor	EPA-8081	U	0.00061	1	MG/KG	05/11/2015	CAS
Toxaphene	EPA-8081	U	0.037	1	MG/KG	05/11/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
pH	EPA-9045	6.27	± 0.01	1	S.U.	04/29/2015	SMR
Fluoride	EPA-300.0M	U	0.16	1	MG/KG	05/04/2015	DNT
Nitrate as N	EPA-300.0M	67	3.4	10	MG/KG	05/04/2015	DNT
Nitrite as N	EPA-300.0M	U	0.43	1	MG/KG	05/04/2015	DNT
Mercury	EPA-7471	0.14	0.0041	1	MG/KG	04/28/2015	RAL
Arsenic	EPA-6020	2.5	0.84	5	MG/KG	05/04/2015	RAL
Barium	EPA-6020	130	0.16	5	MG/KG	05/04/2015	RAL
Cadmium	EPA-6020	U	0.26	5	MG/KG	05/04/2015	RAL
Chromium	EPA-6020	17	0.43	5	MG/KG	05/04/2015	RAL
Iron	EPA-6020	28000	50	5	MG/KG	05/04/2015	RAL
Lead	EPA-6020	25	0.27	5	MG/KG	05/04/2015	RAL
Manganese	EPA-6020	430	0.33	5	MG/KG	05/04/2015	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	05/04/2015	RAL
Silver	EPA-6020	U	0.26	5	MG/KG	05/04/2015	RAL
Sodium	EPA-6020	590	50	5	MG/KG	05/04/2015	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	65.1	04/28/2015	EBS
C25	NWTPH-HCID	92.9	04/28/2015	EBS
C25	NWTPH-DX w/ SGA	111	04/29/2015	EBS
C25	NWTPH-DX	108	04/29/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	141	04/29/2015	DLC



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-02
CLIENT SAMPLE ID	GP-27(5.5-6.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 8:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
1,2-Dichloroethane-d4	EPA-8260	99.8	04/30/2015	DLC
Toluene-d8	EPA-8260	92.9	04/29/2015	DLC
Toluene-d8	EPA-8260	96.3	04/30/2015	DLC
4-Bromofluorobenzene	EPA-8260	104	04/29/2015	DLC
4-Bromofluorobenzene	EPA-8260	94.9	04/30/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	83.4	04/28/2015	GAP
Terphenyl-d14	EPA-8270 SIM	67.2	04/28/2015	GAP
2-Fluorophenol	EPA-8270	96.8	04/29/2015	GAP
Phenol-d5	EPA-8270	98.4	04/29/2015	GAP
Nitrobenzene-d5	EPA-8270	97.0	04/29/2015	GAP
2-Fluorobiphenyl	EPA-8270	105	04/29/2015	GAP
2,4,6-Tribromophenol	EPA-8270	114	04/29/2015	GAP
Terphenyl-d14	EPA-8270	108	04/29/2015	GAP
DCB	EPA-8082	91.0	05/11/2015	CAS
TCMX	EPA-8081	56.0	05/11/2015	CAS
DCB	EPA-8081	80.0	05/11/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-03
CLIENT SAMPLE ID	GP-28(6.5-7.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	04/27/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	04/27/2015	EBS
HCID-Oil Range	NWTPH-HCID	>100	100	1	MG/KG	04/27/2015	EBS
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	04/29/2015	EBS
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	04/29/2015	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	78	50	1	MG/KG	04/29/2015	EBS
TPH-Oil Range	NWTPH-DX	150	50	1	MG/KG	04/29/2015	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Vinyl Chloride	EPA-8260	U	0.047	1	UG/KG	04/29/2015	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Acetone	EPA-8260	280	120	1	UG/KG	04/30/2015	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	04/29/2015	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	04/29/2015	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromodichloromethane	EPA-8260	U	1.1	1	UG/KG	04/29/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Toluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-03
CLIENT SAMPLE ID	GP-28(6.5-7.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,2-Trichloroethane	EPA-8260	U	1.2	1	UG/KG	04/29/2015	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	04/29/2015	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	04/29/2015	DLC
Styrene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	1.3	1	UG/KG	04/29/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	1.3	1	UG/KG	04/29/2015	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
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CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-03
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	100	1	UG/KG	04/28/2015	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pyridine	EPA-8270	U	200	1	UG/KG	04/29/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	31	1	UG/KG	04/29/2015	GAP
Phenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Aniline	EPA-8270	U	53	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	110	1	UG/KG	04/29/2015	GAP
2-Chlorophenol	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Benzyl Alcohol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
3&4-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Hexachloroethane	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Nitrobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Isophorone	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Nitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Benzoic Acid	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	280	1	UG/KG	04/29/2015	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Chloroaniline	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	UG/KG	04/29/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-03
CLIENT SAMPLE ID	GP-28(6.5-7.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Hexachlorocyclopentadiene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	45	1	UG/KG	04/29/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Nitroaniline	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Dimethylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	42	1	UG/KG	04/29/2015	GAP
3-Nitroaniline	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Nitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Dibenzofuran	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Diethylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Nitroaniline	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Azobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Carbazole	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	200	1	UG/KG	04/29/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
PCB-1016	EPA-8082	U	0.0058	1	MG/KG	05/11/2015	CAS
PCB-1221	EPA-8082	U	0.012	1	MG/KG	05/11/2015	CAS
PCB-1232	EPA-8082	U	0.0058	1	MG/KG	05/11/2015	CAS
PCB-1242	EPA-8082	U	0.0058	1	MG/KG	05/11/2015	CAS
PCB-1248	EPA-8082	U	0.0058	1	MG/KG	05/11/2015	CAS
PCB-1254	EPA-8082	U	0.0058	1	MG/KG	05/11/2015	CAS
PCB-1260	EPA-8082	U	0.0058	1	MG/KG	05/11/2015	CAS
A-BHC	EPA-8081	U	0.00058	1	MG/KG	05/11/2015	CAS
G-BHC	EPA-8081	U	0.00058	1	MG/KG	05/11/2015	CAS
B-BHC	EPA-8081	U	0.00058	1	MG/KG	05/11/2015	CAS
Heptachlor	EPA-8081	U	0.00083	1	MG/KG	05/11/2015	CAS
D-BHC	EPA-8081	U	0.00058	1	MG/KG	05/11/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-03
CLIENT SAMPLE ID	GP-28(6.5-7.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Aldrin	EPA-8081	U	0.00058	1	MG/KG	05/11/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.00058	1	MG/KG	05/11/2015	CAS
Chlordane	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
Endosulfan I	EPA-8081	U	0.0017	1	MG/KG	05/11/2015	CAS
4,4'-DDE	EPA-8081	0.0024	0.0016	1	MG/KG	05/11/2015	CAS
Dieldrin	EPA-8081	U	0.00058	1	MG/KG	05/11/2015	CAS
Endrin	EPA-8081	U	0.00058	1	MG/KG	05/11/2015	CAS
4,4'-DDD	EPA-8081	0.0012	0.0010	1	MG/KG	05/11/2015	CAS
Endosulfan II	EPA-8081	U	0.00086	1	MG/KG	05/11/2015	CAS
4,4'-DDT	EPA-8081	U	0.00085	1	MG/KG	05/11/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.0014	1	MG/KG	05/11/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.00058	1	MG/KG	05/11/2015	CAS
Methoxychlor	EPA-8081	U	0.00061	1	MG/KG	05/11/2015	CAS
Toxaphene	EPA-8081	U	0.037	1	MG/KG	05/11/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.00058	1	MG/KG	05/11/2015	CAS
pH	EPA-9045	6.80	± 0.01	1	S.U.	04/29/2015	SMR
Fluoride	EPA-300.0M	U	0.16	1	MG/KG	05/04/2015	DNT
Nitrate as N	EPA-300.0M	8.9	0.34	1	MG/KG	05/04/2015	DNT
Nitrite as N	EPA-300.0M	U	0.43	1	MG/KG	05/04/2015	DNT
Mercury	EPA-7471	0.12	0.0041	1	MG/KG	04/28/2015	RAL
Arsenic	EPA-6020	2.3	0.85	5	MG/KG	05/04/2015	RAL
Barium	EPA-6020	100	0.16	5	MG/KG	05/04/2015	RAL
Cadmium	EPA-6020	U	0.26	5	MG/KG	05/04/2015	RAL
Chromium	EPA-6020	17	0.43	5	MG/KG	05/04/2015	RAL
Iron	EPA-6020	24000	50	5	MG/KG	05/04/2015	RAL
Lead	EPA-6020	14	0.27	5	MG/KG	05/04/2015	RAL
Manganese	EPA-6020	320	0.34	5	MG/KG	05/04/2015	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	05/04/2015	RAL
Silver	EPA-6020	U	0.27	5	MG/KG	05/04/2015	RAL
Sodium	EPA-6020	570	50	5	MG/KG	05/04/2015	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	52.6	04/27/2015	EBS
C25	NWTPH-HCID	76.0	04/27/2015	EBS
C25	NWTPH-DX w/ SGA	110	04/29/2015	EBS
C25	NWTPH-DX	126	04/29/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	146	04/29/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
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CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-03
CLIENT SAMPLE ID	GP-28(6.5-7.5)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 9:30:00 AM
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SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
1,2-Dichloroethane-d4	EPA-8260	102	04/30/2015	DLC
Toluene-d8	EPA-8260	93.0	04/29/2015	DLC
Toluene-d8	EPA-8260	96.0	04/30/2015	DLC
4-Bromofluorobenzene	EPA-8260	98.9	04/29/2015	DLC
4-Bromofluorobenzene	EPA-8260	95.1	04/30/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	109	04/28/2015	GAP
Terphenyl-d14	EPA-8270 SIM	85.0	04/28/2015	GAP
2-Fluorophenol	EPA-8270	87.7	04/29/2015	GAP
Phenol-d5	EPA-8270	91.6	04/29/2015	GAP
Nitrobenzene-d5	EPA-8270	89.6	04/29/2015	GAP
2-Fluorobiphenyl	EPA-8270	96.6	04/29/2015	GAP
2,4,6-Tribromophenol	EPA-8270	102	04/29/2015	GAP
Terphenyl-d14	EPA-8270	97.4	04/29/2015	GAP
DCB	EPA-8082	93.0	05/11/2015	CAS
TCMX	EPA-8081	69.0	05/11/2015	CAS
DCB	EPA-8081	87.0	05/11/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-04
CLIENT SAMPLE ID	GP-29(8.0-9.0)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 1:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	04/28/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	04/28/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	04/28/2015	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Vinyl Chloride	EPA-8260	U	0.043	1	UG/KG	04/29/2015	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Acetone	EPA-8260	190	100	1	UG/KG	04/30/2015	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	04/29/2015	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	04/29/2015	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromodichloromethane	EPA-8260	U	1.0	1	UG/KG	04/29/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Toluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,2-Trichloroethane	EPA-8260	U	1.1	1	UG/KG	04/29/2015	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-04
CLIENT SAMPLE ID	GP-29(8.0-9.0)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 1:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	04/29/2015	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	04/29/2015	DLC
Styrene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	1.1	1	UG/KG	04/29/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	1.2	1	UG/KG	04/29/2015	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	100	1	UG/KG	04/28/2015	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-04
CLIENT SAMPLE ID	GP-29(8.0-9.0)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 1:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pyridine	EPA-8270	U	200	1	UG/KG	04/29/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	28	1	UG/KG	04/29/2015	GAP
Phenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Aniline	EPA-8270	U	48	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Chlorophenol	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Benzyl Alcohol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
3&4-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Hexachloroethane	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Nitrobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Isophorone	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Nitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Benzoic Acid	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	260	1	UG/KG	04/29/2015	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Chloroaniline	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	UG/KG	04/29/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	42	1	UG/KG	04/29/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-04
CLIENT SAMPLE ID	GP-29(8.0-9.0)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 1:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Nitroaniline	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Dimethylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	39	1	UG/KG	04/29/2015	GAP
3-Nitroaniline	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Nitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Dibenzofuran	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Diethylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Nitroaniline	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Azobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Carbazole	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	180	1	UG/KG	04/29/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
PCB-1016	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1221	EPA-8082	U	0.011	1	MG/KG	05/11/2015	CAS
PCB-1232	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1242	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1248	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1254	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1260	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
A-BHC	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
G-BHC	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
B-BHC	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
Heptachlor	EPA-8081	U	0.00083	1	MG/KG	05/11/2015	CAS
D-BHC	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
Aldrin	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
Chlordane	EPA-8081	U	0.00060	1	MG/KG	05/11/2015	CAS
Endosulfan I	EPA-8081	U	0.0017	1	MG/KG	05/11/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-04
CLIENT SAMPLE ID	GP-29(8.0-9.0)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 1:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4,4'-DDE	EPA-8081	U	0.0016	1	MG/KG	05/11/2015	CAS
Dieldrin	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
Endrin	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
4,4'-DDD	EPA-8081	U	0.0010	1	MG/KG	05/11/2015	CAS
Endosulfan II	EPA-8081	U	0.00086	1	MG/KG	05/11/2015	CAS
4,4'-DDT	EPA-8081	0.0011	0.00085	1	MG/KG	05/11/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.0014	1	MG/KG	05/11/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.00057	1	MG/KG	05/11/2015	CAS
Methoxychlor	EPA-8081	U	0.00061	1	MG/KG	05/11/2015	CAS
Toxaphene	EPA-8081	U	0.037	1	MG/KG	05/11/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.00054	1	MG/KG	05/11/2015	CAS
pH	EPA-9045	7.82	± 0.01	1	S.U.	04/29/2015	SMR
Fluoride	EPA-300.0M	U	0.16	1	MG/KG	05/04/2015	DNT
Nitrate as N	EPA-300.0M	17	0.34	1	MG/KG	05/04/2015	DNT
Nitrite as N	EPA-300.0M	U	0.43	1	MG/KG	05/04/2015	DNT
Mercury	EPA-7471	0.089	0.0041	1	MG/KG	04/28/2015	RAL
Arsenic	EPA-6020	3.1	0.78	5	MG/KG	05/04/2015	RAL
Barium	EPA-6020	130	0.15	5	MG/KG	05/04/2015	RAL
Cadmium	EPA-6020	U	0.24	5	MG/KG	05/04/2015	RAL
Chromium	EPA-6020	19	0.40	5	MG/KG	05/04/2015	RAL
Iron	EPA-6020	29000	50	5	MG/KG	05/04/2015	RAL
Lead	EPA-6020	8.7	0.25	5	MG/KG	05/04/2015	RAL
Manganese	EPA-6020	510	0.31	5	MG/KG	05/04/2015	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	05/04/2015	RAL
Silver	EPA-6020	U	0.25	5	MG/KG	05/04/2015	RAL
Sodium	EPA-6020	700	50	5	MG/KG	05/04/2015	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	58.2	04/28/2015	EBS
C25	NWTPH-HCID	65.3	04/28/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	139	04/29/2015	DLC
1,2-Dichloroethane-d4	EPA-8260	101	04/30/2015	DLC
Toluene-d8	EPA-8260	90.4	04/29/2015	DLC
Toluene-d8	EPA-8260	95.5	04/30/2015	DLC
4-Bromofluorobenzene	EPA-8260	98.1	04/29/2015	DLC
4-Bromofluorobenzene	EPA-8260	94.9	04/30/2015	DLC
2,4,6-Tribromophenol	EPA-8270 SIM	107	04/28/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-04
CLIENT SAMPLE ID	GP-29(8.0-9.0)-04232015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/23/2015 1:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
Terphenyl-d14	EPA-8270 SIM	95.3	04/28/2015	GAP
2-Fluorophenol	EPA-8270	98.6	04/29/2015	GAP
Phenol-d5	EPA-8270	104	04/29/2015	GAP
Nitrobenzene-d5	EPA-8270	89.8	04/29/2015	GAP
2-Fluorobiphenyl	EPA-8270	108	04/29/2015	GAP
2,4,6-Tribromophenol	EPA-8270	114	04/29/2015	GAP
Terphenyl-d14	EPA-8270	116	04/29/2015	GAP
DCB	EPA-8082	101	05/11/2015	CAS
TCMX	EPA-8081	74.0	05/11/2015	CAS
DCB	EPA-8081	96.0	05/11/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-05
CLIENT SAMPLE ID	GP-30(8.0-8.5)-04242015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/24/2015 8:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	04/27/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	04/27/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	04/27/2015	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	100	1	UG/KG	04/28/2015	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pyridine	EPA-8270	U	200	1	UG/KG	04/29/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	29	1	UG/KG	04/29/2015	GAP
Phenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Aniline	EPA-8270	U	51	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	110	1	UG/KG	04/29/2015	GAP
2-Chlorophenol	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Benzyl Alcohol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
3&4-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Hexachloroethane	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Nitrobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Isophorone	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Nitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-05
CLIENT SAMPLE ID	GP-30(8.0-8.5)-04242015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/24/2015 8:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Benzoic Acid	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	270	1	UG/KG	04/29/2015	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Chloroaniline	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	UG/KG	04/29/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	44	1	UG/KG	04/29/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Nitroaniline	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Dimethylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	41	1	UG/KG	04/29/2015	GAP
3-Nitroaniline	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Nitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Dibenzofuran	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Diethylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Nitroaniline	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Azobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Carbazole	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	190	1	UG/KG	04/29/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
PCB-1016	EPA-8082	U	0.0056	1	MG/KG	05/11/2015	CAS
PCB-1221	EPA-8082	U	0.012	1	MG/KG	05/11/2015	CAS
PCB-1232	EPA-8082	U	0.0056	1	MG/KG	05/11/2015	CAS
PCB-1242	EPA-8082	U	0.0056	1	MG/KG	05/11/2015	CAS
PCB-1248	EPA-8082	U	0.0056	1	MG/KG	05/11/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-05
CLIENT SAMPLE ID	GP-30(8.0-8.5)-04242015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/24/2015 8:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1254	EPA-8082	U	0.0056	1	MG/KG	05/11/2015	CAS
PCB-1260	EPA-8082	U	0.0056	1	MG/KG	05/11/2015	CAS
A-BHC	EPA-8081	U	0.00056	1	MG/KG	05/12/2015	CAS
G-BHC	EPA-8081	U	0.00056	1	MG/KG	05/12/2015	CAS
B-BHC	EPA-8081	U	0.00056	1	MG/KG	05/12/2015	CAS
Heptachlor	EPA-8081	U	0.00083	1	MG/KG	05/12/2015	CAS
D-BHC	EPA-8081	U	0.00056	1	MG/KG	05/12/2015	CAS
Aldrin	EPA-8081	U	0.00056	1	MG/KG	05/12/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.00056	1	MG/KG	05/12/2015	CAS
Chlordane	EPA-8081	U	0.00060	1	MG/KG	05/12/2015	CAS
Endosulfan I	EPA-8081	U	0.0017	1	MG/KG	05/12/2015	CAS
4,4'-DDE	EPA-8081	U	0.0016	1	MG/KG	05/12/2015	CAS
Dieldrin	EPA-8081	U	0.00056	1	MG/KG	05/12/2015	CAS
Endrin	EPA-8081	U	0.00056	1	MG/KG	05/12/2015	CAS
4,4'-DDD	EPA-8081	U	0.0010	1	MG/KG	05/12/2015	CAS
Endosulfan II	EPA-8081	U	0.00086	1	MG/KG	05/12/2015	CAS
4,4'-DDT	EPA-8081	U	0.00085	1	MG/KG	05/12/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.0014	1	MG/KG	05/12/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.00057	1	MG/KG	05/12/2015	CAS
Methoxychlor	EPA-8081	U	0.00061	1	MG/KG	05/12/2015	CAS
Toxaphene	EPA-8081	U	0.037	1	MG/KG	05/12/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.00056	1	MG/KG	05/12/2015	CAS
pH	EPA-9045	7.60	± 0.01	1	S.U.	04/29/2015	SMR
Fluoride	EPA-300.0M	U	0.16	1	MG/KG	05/04/2015	DNT
Nitrate as N	EPA-300.0M	1.7	0.34	1	MG/KG	05/04/2015	DNT
Nitrite as N	EPA-300.0M	U	0.43	1	MG/KG	05/04/2015	DNT
Mercury	EPA-7471	0.044	0.0041	1	MG/KG	04/28/2015	RAL
Arsenic	EPA-6020	1.6	0.82	5	MG/KG	05/04/2015	RAL
Barium	EPA-6020	60	0.16	5	MG/KG	05/04/2015	RAL
Cadmium	EPA-6020	U	0.25	5	MG/KG	05/04/2015	RAL
Chromium	EPA-6020	14	0.41	5	MG/KG	05/04/2015	RAL
Iron	EPA-6020	22000	50	5	MG/KG	05/04/2015	RAL
Lead	EPA-6020	3.5	0.26	5	MG/KG	05/04/2015	RAL
Manganese	EPA-6020	320	0.32	5	MG/KG	05/04/2015	RAL
Selenium	EPA-6020	U	5.0	5	MG/KG	05/04/2015	RAL
Silver	EPA-6020	U	0.26	5	MG/KG	05/04/2015	RAL
Sodium	EPA-6020	440	50	5	MG/KG	05/04/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	ALS SAMPLE#:	EV15040134-05
CLIENT SAMPLE ID	GP-30(8.0-8.5)-04242015	DATE RECEIVED:	04/27/2015
		COLLECTION DATE:	4/24/2015 8:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
BCB	NWTPH-HCID	67.7	04/27/2015	EBS
C25	NWTPH-HCID	74.0	04/27/2015	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	90.3	04/28/2015	GAP
Terphenyl-d14	EPA-8270 SIM	82.0	04/28/2015	GAP
2-Fluorophenol	EPA-8270	106	04/29/2015	GAP
Phenol-d5	EPA-8270	110	04/29/2015	GAP
Nitrobenzene-d5	EPA-8270	107	04/29/2015	GAP
2-Fluorobiphenyl	EPA-8270	114	04/29/2015	GAP
2,4,6-Tribromophenol	EPA-8270	120	04/29/2015	GAP
Terphenyl-d14	EPA-8270	122	04/29/2015	GAP
DCB	EPA-8082	98.0	05/11/2015	CAS
TCMX	EPA-8081	62.0	05/12/2015	CAS
DCB	EPA-8081	69.0	05/12/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 6/17/2015
 130 - 2nd Ave. S. ALS SDG#: EV15040134
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030

LABORATORY BLANK RESULTS

MB-042715S - Batch 92878 - Soil by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range	NWTPH-HCID	U	20	1	MG/KG	04/27/2015	EBS
HCID-Diesel Range	NWTPH-HCID	U	50	1	MG/KG	04/27/2015	EBS
HCID-Oil Range	NWTPH-HCID	U	100	1	MG/KG	04/27/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-042815S - Batch 92913 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	04/28/2015	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	04/28/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-042915S - Batch 93041 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Vinyl Chloride	EPA-8260	U	0.029	1	UG/KG	04/29/2015	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Acetone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	04/29/2015	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-042915S - Batch 93041 - Soil by EPA-8260

Benzene	EPA-8260	U	5.0	1	UG/KG	04/29/2015	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromodichloromethane	EPA-8260	U	0.69	1	UG/KG	04/29/2015	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
Toluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.74	1	UG/KG	04/29/2015	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	04/29/2015	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	04/29/2015	DLC
Styrene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.76	1	UG/KG	04/29/2015	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.80	1	UG/KG	04/29/2015	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	04/29/2015	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-042915S - Batch 93041 - Soil by EPA-8260

Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	04/29/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-042715S - Batch 92868 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	100	1	UG/KG	04/28/2015	GAP
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	04/28/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-042415S - Batch 93063 - Soil by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	200	1	UG/KG	04/29/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	33	1	UG/KG	04/29/2015	GAP
Phenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Aniline	EPA-8270	U	58	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	120	1	UG/KG	04/29/2015	GAP
2-Chlorophenol	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Benzyl Alcohol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-042415S - Batch 93063 - Soil by EPA-8270

3&4-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Hexachloroethane	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Nitrobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Isophorone	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Nitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Benzoic Acid	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	310	1	UG/KG	04/29/2015	GAP
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Chloroaniline	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	500	1	UG/KG	04/29/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	49	1	UG/KG	04/29/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Chloronaphthalene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2-Nitroaniline	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Dimethylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	46	1	UG/KG	04/29/2015	GAP
3-Nitroaniline	EPA-8270	U	1000	1	UG/KG	04/29/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Nitrophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Dibenzofuran	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Diethylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Nitroaniline	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Azobenzene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Carbazole	EPA-8270	U	250	1	UG/KG	04/29/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Pyrene	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
Butylbenzylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	210	1	UG/KG	04/29/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 6/17/2015
 130 - 2nd Ave. S. ALS SDG#: EV15040134
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030

LABORATORY BLANK RESULTS

MB-042415S - Batch 93063 - Soil by EPA-8270

Di-N-Octylphthalate	EPA-8270	U	100	1	UG/KG	04/29/2015	GAP
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U - Analyte analyzed for but not detected at level above reporting limit.

MB1-05/11/2015 - Batch R254779 - Soil by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1221	EPA-8082	U	0.011	1	MG/KG	05/11/2015	CAS
PCB-1232	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1242	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1248	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1254	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS
PCB-1260	EPA-8082	U	0.0054	1	MG/KG	05/11/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-05/12/2015 - Batch R254777 - Soil by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.00054	1	MG/KG	05/12/2015	CAS
G-BHC	EPA-8081	U	0.00054	1	MG/KG	05/12/2015	CAS
B-BHC	EPA-8081	U	0.00054	1	MG/KG	05/12/2015	CAS
Heptachlor	EPA-8081	U	0.00083	1	MG/KG	05/12/2015	CAS
D-BHC	EPA-8081	U	0.00054	1	MG/KG	05/12/2015	CAS
Aldrin	EPA-8081	U	0.00054	1	MG/KG	05/12/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.00054	1	MG/KG	05/12/2015	CAS
Chlordane	EPA-8081	U	0.00060	1	MG/KG	05/12/2015	CAS
Endosulfan I	EPA-8081	U	0.0017	1	MG/KG	05/12/2015	CAS
4,4'-DDE	EPA-8081	U	0.0016	1	MG/KG	05/12/2015	CAS
Dieldrin	EPA-8081	U	0.00054	1	MG/KG	05/12/2015	CAS
Endrin	EPA-8081	U	0.00054	1	MG/KG	05/12/2015	CAS
4,4'-DDD	EPA-8081	U	0.0010	1	MG/KG	05/12/2015	CAS
Endosulfan II	EPA-8081	U	0.00086	1	MG/KG	05/12/2015	CAS
4,4'-DDT	EPA-8081	U	0.00085	1	MG/KG	05/12/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.0014	1	MG/KG	05/12/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.00057	1	MG/KG	05/12/2015	CAS
Methoxychlor	EPA-8081	U	0.00061	1	MG/KG	05/12/2015	CAS
Toxaphene	EPA-8081	U	0.037	1	MG/KG	05/12/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.00054	1	MG/KG	05/12/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 6/17/2015
 130 - 2nd Ave. S. ALS SDG#: EV15040134
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030

LABORATORY BLANK RESULTS

MBLK-542015 - Batch R254772 - Soil by EPA-300.0M

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoride	EPA-300.0M	U	0.16	1	MG/KG	05/04/2015	DNT
Nitrate as N	EPA-300.0M	U	0.34	1	MG/KG	05/04/2015	DNT
Nitrite as N	EPA-300.0M	U	0.43	1	MG/KG	05/04/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-4282015 - Batch R253660 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	0.0041	1	MG/KG	04/28/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-043015S - Batch 93015 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	0.15	1	MG/KG	05/04/2015	RAL
Barium	EPA-6020	U	0.028	1	MG/KG	05/04/2015	RAL
Cadmium	EPA-6020	U	0.045	1	MG/KG	05/04/2015	RAL
Chromium	EPA-6020	U	0.074	1	MG/KG	05/04/2015	RAL
Iron	EPA-6020	U	10	1	MG/KG	05/04/2015	RAL
Lead	EPA-6020	U	0.047	1	MG/KG	05/04/2015	RAL
Manganese	EPA-6020	U	0.058	1	MG/KG	05/04/2015	RAL
Selenium	EPA-6020	U	1.0	1	MG/KG	05/04/2015	RAL
Silver	EPA-6020	U	0.046	1	MG/KG	05/04/2015	RAL
Sodium	EPA-6020	U	10	1	MG/KG	05/04/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 92913 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	102			04/28/2015	EBS
TPH-Diesel Range - BSD	NWTPH-DX	104	2		04/28/2015	EBS

ALS Test Batch ID: 93041 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	86.4			04/29/2015	DLC
1,1-Dichloroethene - BSD	EPA-8260	88.1	2		04/29/2015	DLC
Benzene - BS	EPA-8260	98.6			04/29/2015	DLC
Benzene - BSD	EPA-8260	101	3		04/29/2015	DLC
Trichloroethene - BS	EPA-8260	94.9			04/29/2015	DLC
Trichloroethene - BSD	EPA-8260	97.0	2		04/29/2015	DLC
Toluene - BS	EPA-8260	95.6			04/29/2015	DLC
Toluene - BSD	EPA-8260	96.3	1		04/29/2015	DLC
Chlorobenzene - BS	EPA-8260	97.9			04/29/2015	DLC
Chlorobenzene - BSD	EPA-8260	96.8	1		04/29/2015	DLC

ALS Test Batch ID: 92868 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	EPA-8270 SIM	80.0			04/28/2015	GAP
Naphthalene - BSD	EPA-8270 SIM	79.0	1		04/28/2015	GAP
Acenaphthene - BS	EPA-8270 SIM	87.6			04/28/2015	GAP
Acenaphthene - BSD	EPA-8270 SIM	86.4	1		04/28/2015	GAP
Pentachlorophenol - BS	EPA-8270 SIM	71.8			04/28/2015	GAP
Pentachlorophenol - BSD	EPA-8270 SIM	66.8	7		04/28/2015	GAP
Pyrene - BS	EPA-8270 SIM	94.1			04/28/2015	GAP
Pyrene - BSD	EPA-8270 SIM	87.7	7		04/28/2015	GAP
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	105			04/28/2015	GAP
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	101	4		04/28/2015	GAP

ALS Test Batch ID: 93063 - Soil by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	48.8			04/29/2015	GAP
Phenol - BSD	EPA-8270	54.2	11		04/29/2015	GAP
2-Chlorophenol - BS	EPA-8270	48.1		SQ3	04/29/2015	GAP
2-Chlorophenol - BSD	EPA-8270	53.4	10	SQ3	04/29/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	51.4			04/29/2015	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	55.3	7		04/29/2015	GAP
1,2,4-Trichlorobenzene - BS	EPA-8270	65.4			04/29/2015	GAP
1,2,4-Trichlorobenzene - BSD	EPA-8270	65.3	0		04/29/2015	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	50.0			04/29/2015	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	57.6	14		04/29/2015	GAP
4-Nitrophenol - BS	EPA-8270	41.7			04/29/2015	GAP
4-Nitrophenol - BSD	EPA-8270	45.9	10		04/29/2015	GAP
2,4-Dinitrotoluene - BS	EPA-8270	55.5			04/29/2015	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	58.0	4		04/29/2015	GAP
Pyrene - BS	EPA-8270	72.8			04/29/2015	GAP
Pyrene - BSD	EPA-8270	77.0	6		04/29/2015	GAP

SQ3 - Spike outside of control limits due to sporadic marginal failure. All other spikes in extraction fraction within control limits. No corrective action taken.

ALS Test Batch ID: R254779 - Soil by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	69.0			05/11/2015	CAS
PCB-1260 - BS	EPA-8082	78.5			05/11/2015	CAS

ALS Test Batch ID: R254777 - Soil by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	72.2			05/12/2015	CAS
G-BHC - BS	EPA-8081	73.4			05/12/2015	CAS
B-BHC - BS	EPA-8081	69.4			05/12/2015	CAS
Heptachlor - BS	EPA-8081	69.8			05/12/2015	CAS
D-BHC - BS	EPA-8081	77.0			05/12/2015	CAS
Aldrin - BS	EPA-8081	69.8			05/12/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	73.8			05/12/2015	CAS
Chlordane - BS	EPA-8081	72.8			05/12/2015	CAS
Endosulfan I - BS	EPA-8081	39.2			05/12/2015	CAS
4,4'-DDE - BS	EPA-8081	76.6			05/12/2015	CAS
Dieldrin - BS	EPA-8081	76.4			05/12/2015	CAS
Endrin 5X Dilution - BS	EPA-8081	93.2			05/15/2015	CAS
4,4'-DDD - BS	EPA-8081	76.8			05/12/2015	CAS
Endosulfan II - BS	EPA-8081	47.2			05/12/2015	CAS
4,4'-DDT 5X Dilution - BS	EPA-8081	98.8			05/15/2015	CAS
Endrin Aldehyde - BS	EPA-8081	74.0			05/12/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	6/17/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15040134
CLIENT PROJECT:	Yakima Landfill / #1148008.030	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Endosulfan Sulfate - BS	EPA-8081	74.2			05/12/2015	CAS
Methoxychlor - BS	EPA-8081	74.0			05/12/2015	CAS
Toxaphene - BS	EPA-8081	75.6			05/12/2015	CAS
Hexachlorobenzene - BS	EPA-8081	62.8			05/12/2015	CAS

ALS Test Batch ID: R254772 - Soil by EPA-300.0M

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Fluoride - BS	EPA-300.0M	93.0			05/04/2015	DNT
Fluoride - BSD	EPA-300.0M	97.0	4		05/04/2015	DNT
Nitrate as N - BS	EPA-300.0M	106			05/04/2015	DNT
Nitrate as N - BSD	EPA-300.0M	104	2		05/04/2015	DNT
Nitrite as N - BS	EPA-300.0M	96.0			05/04/2015	DNT
Nitrite as N - BSD	EPA-300.0M	96.0	0		05/04/2015	DNT

ALS Test Batch ID: R253660 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7471	113			04/28/2015	RAL
Mercury - BSD	EPA-7471	110	3		04/28/2015	RAL

ALS Test Batch ID: 93015 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-6020	96.3			05/04/2015	RAL
Arsenic - BSD	EPA-6020	99.2	3		05/04/2015	RAL
Barium - BS	EPA-6020	100			05/04/2015	RAL
Barium - BSD	EPA-6020	103	3		05/04/2015	RAL
Cadmium - BS	EPA-6020	99.2			05/04/2015	RAL
Cadmium - BSD	EPA-6020	103	4		05/04/2015	RAL
Chromium - BS	EPA-6020	99.1			05/04/2015	RAL
Chromium - BSD	EPA-6020	101	2		05/04/2015	RAL
Iron - BS	EPA-6020	98.6			05/04/2015	RAL
Iron - BSD	EPA-6020	103	4		05/04/2015	RAL
Lead - BS	EPA-6020	99.1			05/04/2015	RAL
Lead - BSD	EPA-6020	102	3		05/04/2015	RAL
Manganese - BS	EPA-6020	98.6			05/04/2015	RAL
Manganese - BSD	EPA-6020	109	10		05/04/2015	RAL
Selenium - BS	EPA-6020	95.6			05/04/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 6/17/2015
130 - 2nd Ave. S. ALS SDG#: EV15040134
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.030

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Selenium - BSD	EPA-6020	99.1	4		05/04/2015	RAL
Silver - BS	EPA-6020	101			05/04/2015	RAL
Silver - BSD	EPA-6020	105	3		05/04/2015	RAL
Sodium - BS	EPA-6020	94.9			05/04/2015	RAL
Sodium - BSD	EPA-6020	97.5	3		05/04/2015	RAL

APPROVED BY

Laboratory Director

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Cardan

ALS Job #: EV15040134

Project: Yan Y. ma

Received Date: 9/27/15 Received Time: 1100 By: CAW

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express

Were custody seals on outside of sample? Yes No N/A
If yes, how many? 1 Where? Water
Custody seal date: 9/29/15 Seal name: John Shu

Was Chain of Custody properly filled out (ink, signed, dated, etc.)? Yes No N/A

Did all bottles have labels? Yes No N/A

Did all bottle labels and tags agree with Chain of Custody? Yes No N/A

Were samples received within hold time? Yes No N/A

Did all bottles arrive in good condition (unbroken, etc.)? Yes No N/A

Was sufficient amount of sample sent for the tests indicated? Yes No N/A

Was correct preservation added to samples? Yes No N/A

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

rec'd 4
8-5035 low kits
TKK

Were VOA vials checked for absence of air bubbles? Yes No N/A
Bubbles present in sample #: _____

Temperature of cooler upon receipt: 7.2C on ice Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

EV15040134

LA LANDAU ASSOCIATES
 Seattle/Edmonds (425) 778-0907
 Tacoma (253) 926-2493
 Spokane (509) 327-9737
 Portland (503) 542-1080

Date 4/24/15
 Page 1 of 1

Chain-of-Custody Record

Project Name Yakima Landfill Project No. 1148008.030

Project Location/Event Yakima, WA

Sampler's Name Steve Shaw

Project Contact Jeffrey Fellows

Send Results To Jeffrey Fellows, Anne Helweg, Steve Shaw

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters	Observations/Comments
1 GP-31(6.5-7.5)	4/22/15	1145	soil	6	Metals* As, Ba, Cd, Cr, Pb, Fe, Mn, Se, Ag, Na, + Hg VOCs (8082 LL) SVOCs (8160) TPH-H-10 DX 1/10 DX 1/50 Conventional* PH	X Allow water samples to settle - collect aliquot from clear portion <u>505 7/24/15</u> X WVPH + DX + trace acid wash + silica get cleanup run samples standardized to _____ product Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): non-preserved preserved w/methanol preserved w/sodium bisulfate Freeze upon receipt Dissolved metal water samples field filtered Other: * <u>As, Ba, Cd, Cr, Pb, Fe, Mn, Se, Ag, Na, + Hg (6010 + 3471)</u> ** <u>Fluoride, nitrate, nitrite</u> <u>A = active for followup analysis</u>
2 GP-27(5.5-6.5)	4/23/15	0830	L	1		
3 GP-28(6.5-7.5)	4/23/15	0930	L	1		
4 GP-29(8.0-9.0)	4/23/15	1345	L	3		
5 GP-30(8.0-8.5)	4/24/15	0845	L	3		

Special Shipment/Handling or Storage Requirements: cool to ice Add DX per instructions

Relinquished by: Carl Mott Signature, Carl Mott Printed Name, AMS Company, Date 4/23/15 Time 1100

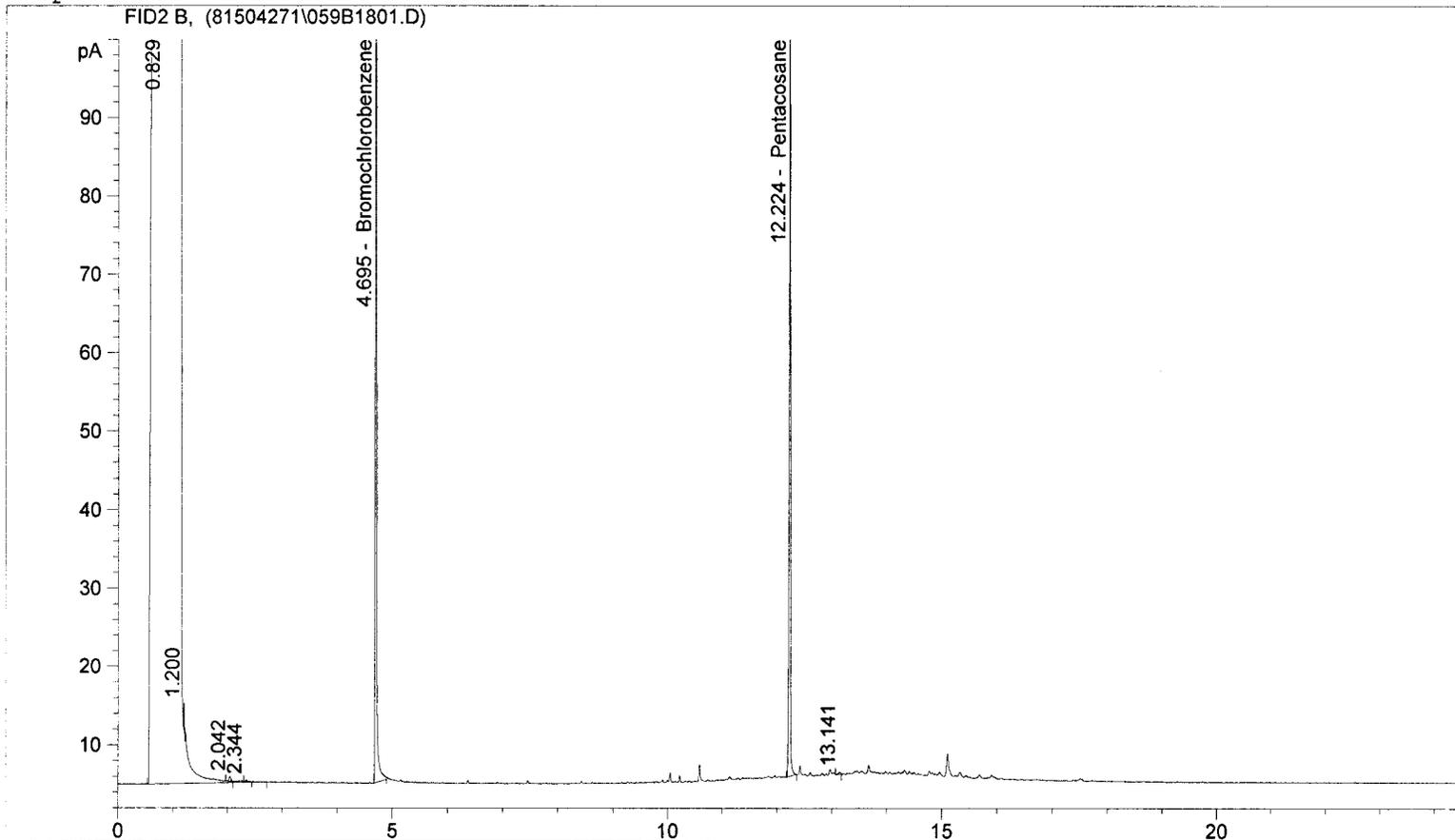
Received by: Steve Shaw Signature, Steve Shaw Printed Name, Landau Associates Company, Date 4/24/15 Time 0900

Relinquished by: _____ Signature, _____ Printed Name, _____ Company, Date _____ Time _____

Received by: _____ Signature, _____ Printed Name, _____ Company, Date _____ Time _____

Method of Shipment: p/u in Edwards

Sample Name: EV15040134-01 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.695	FID2 B,	Bromochlorobenzene	360.473	33.333
12.224		Pentacosane	165.823	6.569

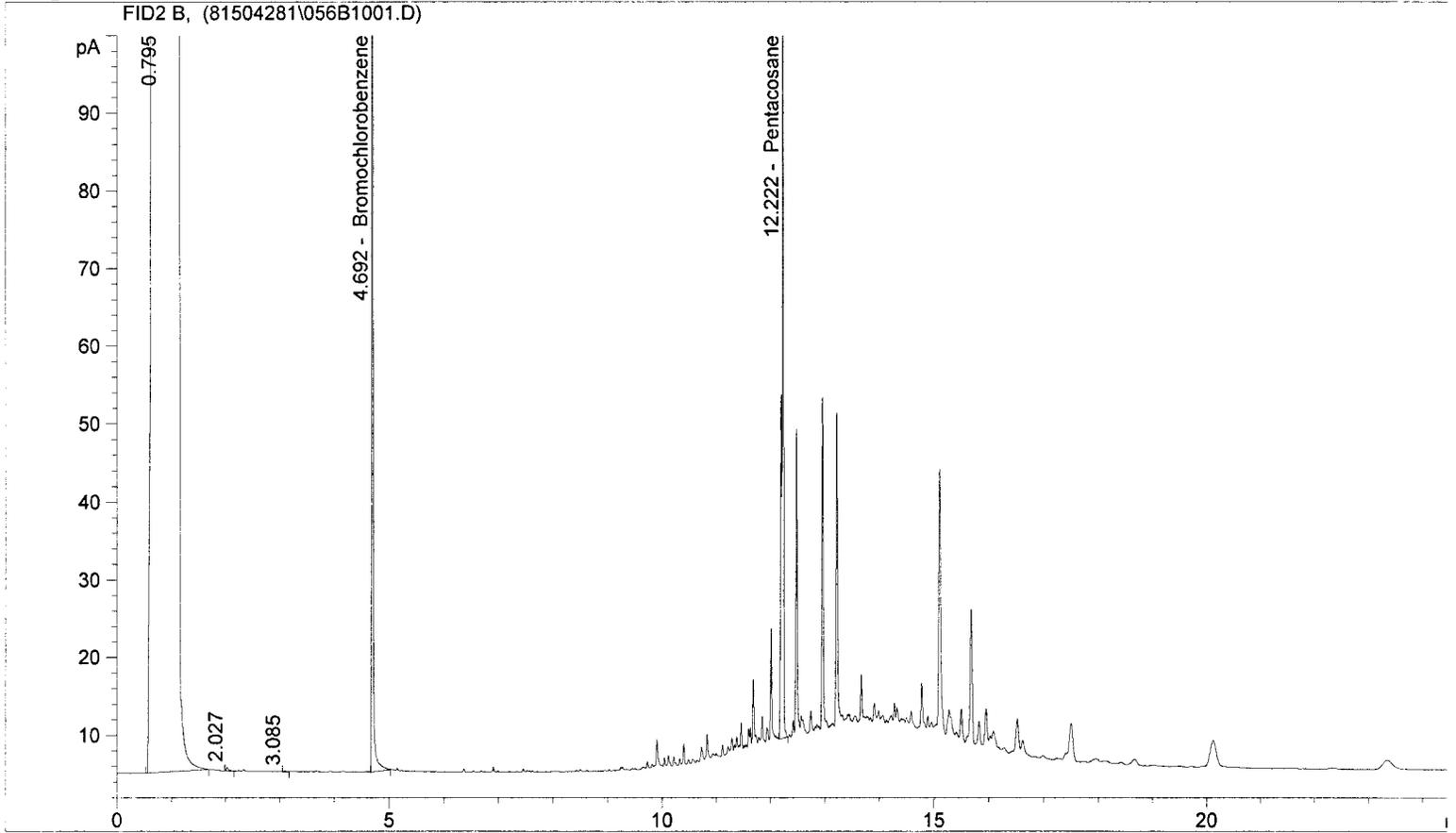
67%
66%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

REVIEWED BY *MB*
 & DATE *4/29/15*

04.28.15 EJ

Sample Name: EV15040134-02 RX HCID



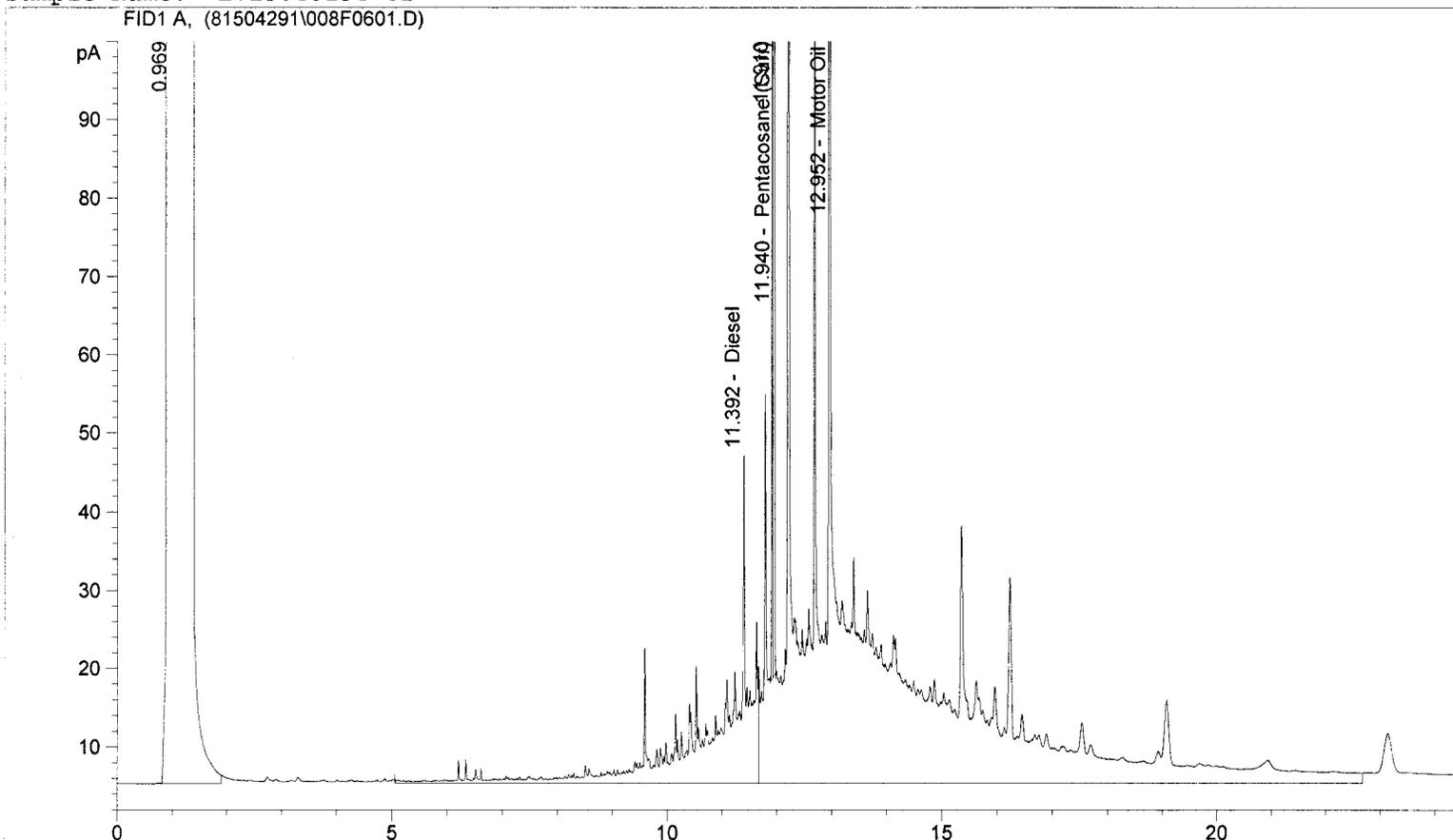
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.692	FID2 B,	Bromochlorobenzene	351.743	32.526
12.222		Pentacosane	234.613	9.294

65%
93%

G < 20 mg/kg
D < 50 mg/kg
G > 100 mg/kg Luke Oil or similar product

REVIEWED BY *MB* *04.28.15 EJ*
 & DATE *4/29/15*

Sample Name: EV15040134-02
 FID1 A, (81504291\008F0601.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
11.392	FID1 A,	Diesel	1058.145	91.358
11.940		Pentacosane (Surr)	262.695	10.819
12.952		Motor Oil	6153.357	566.653

108/-
20.57g

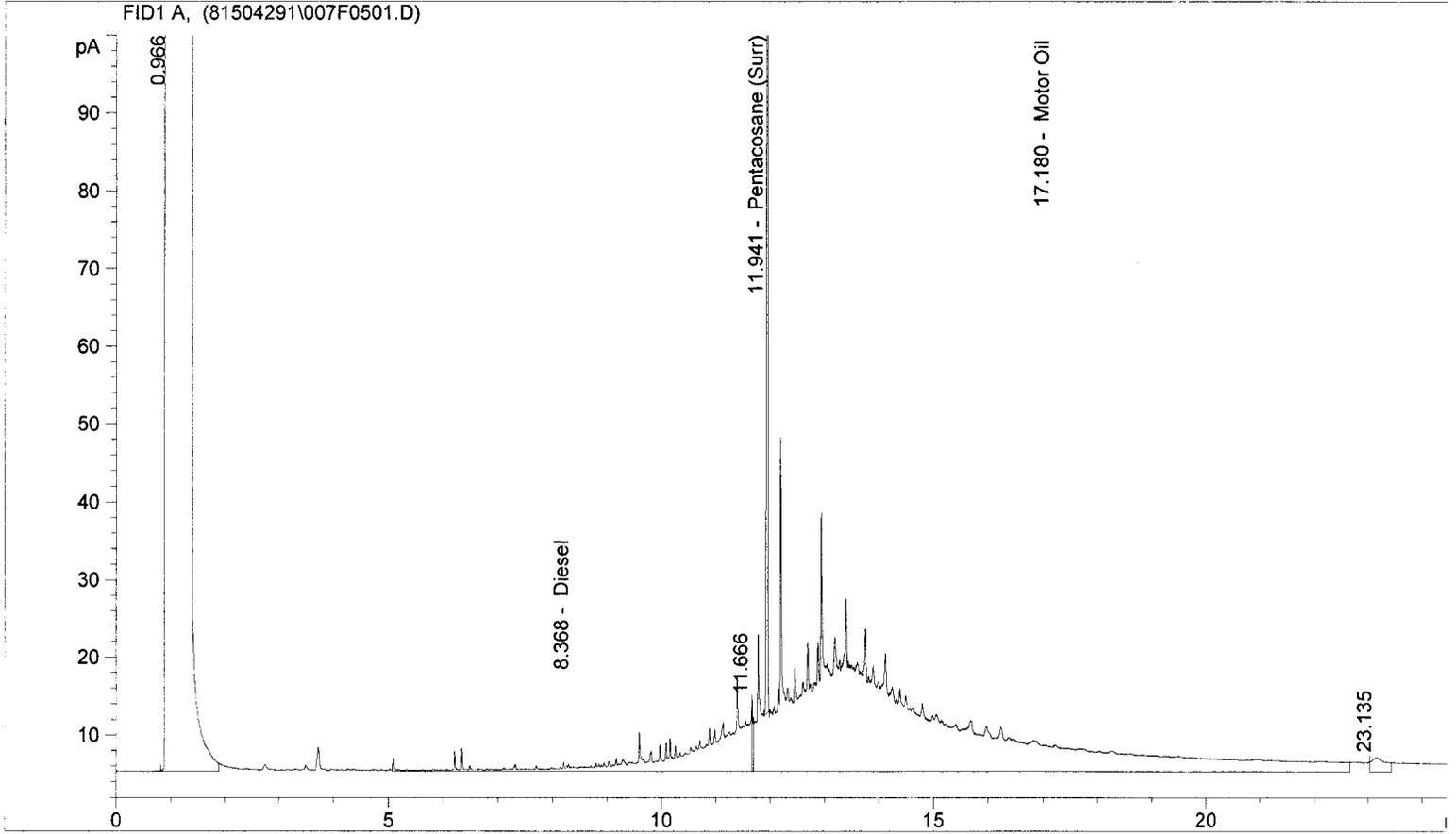
D < 25 mg/kg

O = 566.653 ug/mL x 10 mL / 20.57g = 280 mg/kg Lubricant Oil or similar product

REVIEWED BY *BS*
 DATE *5/6/15*

off. 29.15E

Sample Name: EV15040134-02 SGA
 FID1 A, (81504291\007F0501.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	537.290	46.388
11.941		Pentacosane (Surr)	268.961	11.077
17.180		Motor Oil	3392.721	312.430

11%
 20.57g

D < 50 mg/kg

0 = 312.430 ug/mL × $\frac{10\text{mL}}{20.57\text{g}}$ = 150 mg/kg

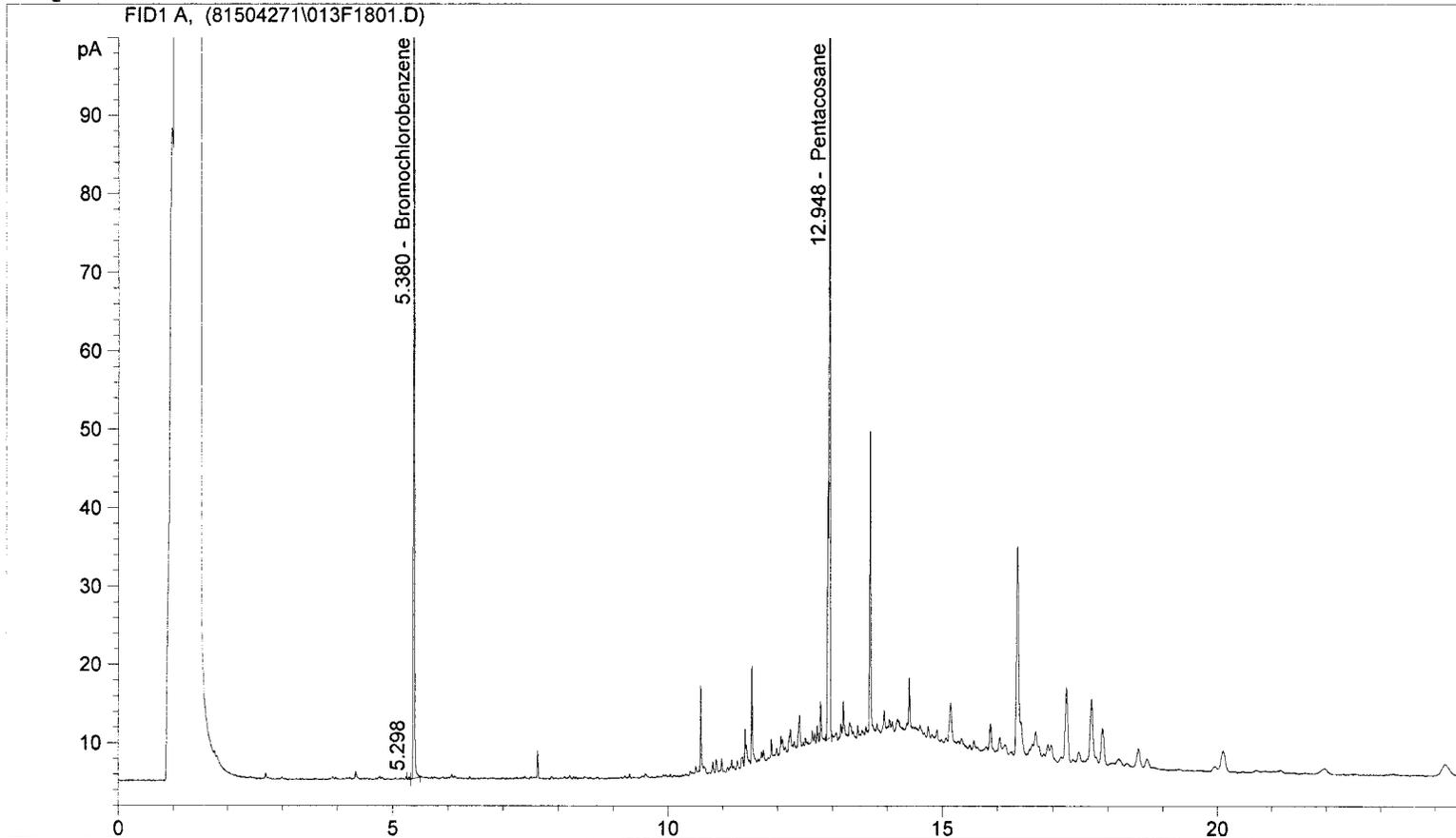
*Lube Oil
 or similar product*

REVIEWED BY *13*
 & DATE *5/6/15*

04.29.15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81504271\013F1801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDS.M
 Injection Date & Time: 4/27/2015 7:49:42 PM 4/27/2015 7:49:42 PM
 Report Creation: 4/28/2015 10:51:32 AM

Sample Name: EV15040134-03 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	297.544	26.299
12.948		Pentacosane	188.116	7.600

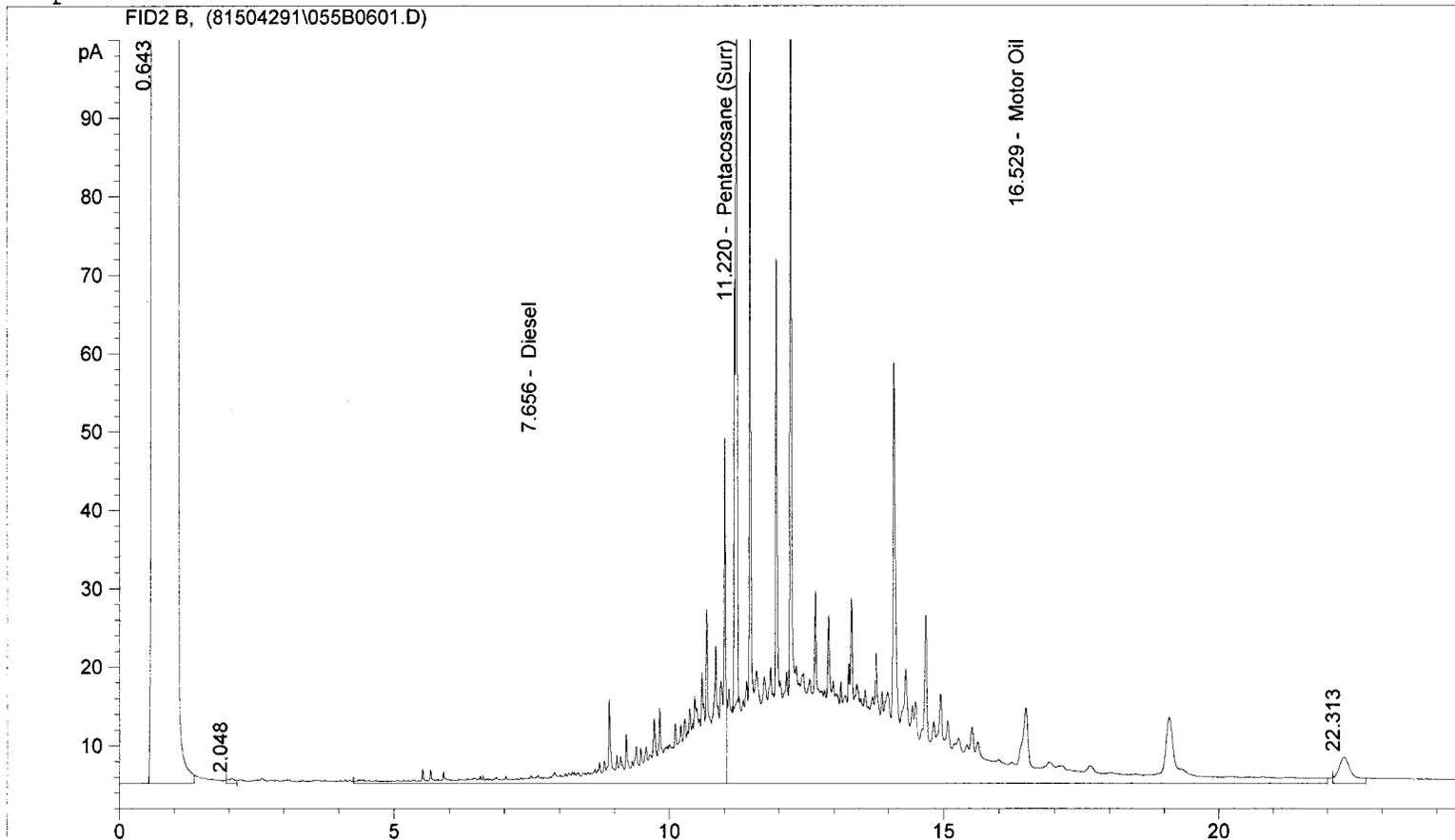
53%
76%

G < 20 mg/kg
 D < 50 mg/kg
 O > 100 mg/kg Lube Oil or similar product

REVIEWED BY MS
 & DATE 4/29/15

04.28.15

Sample Name: EV15040134-03
 FID2 B, (81504291\055B0601.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	1025.299	79.697
11.220		Pentacosane (Surr)	354.065	12.645
16.529		Motor Oil	4005.234	316.753

126%
 21.03g

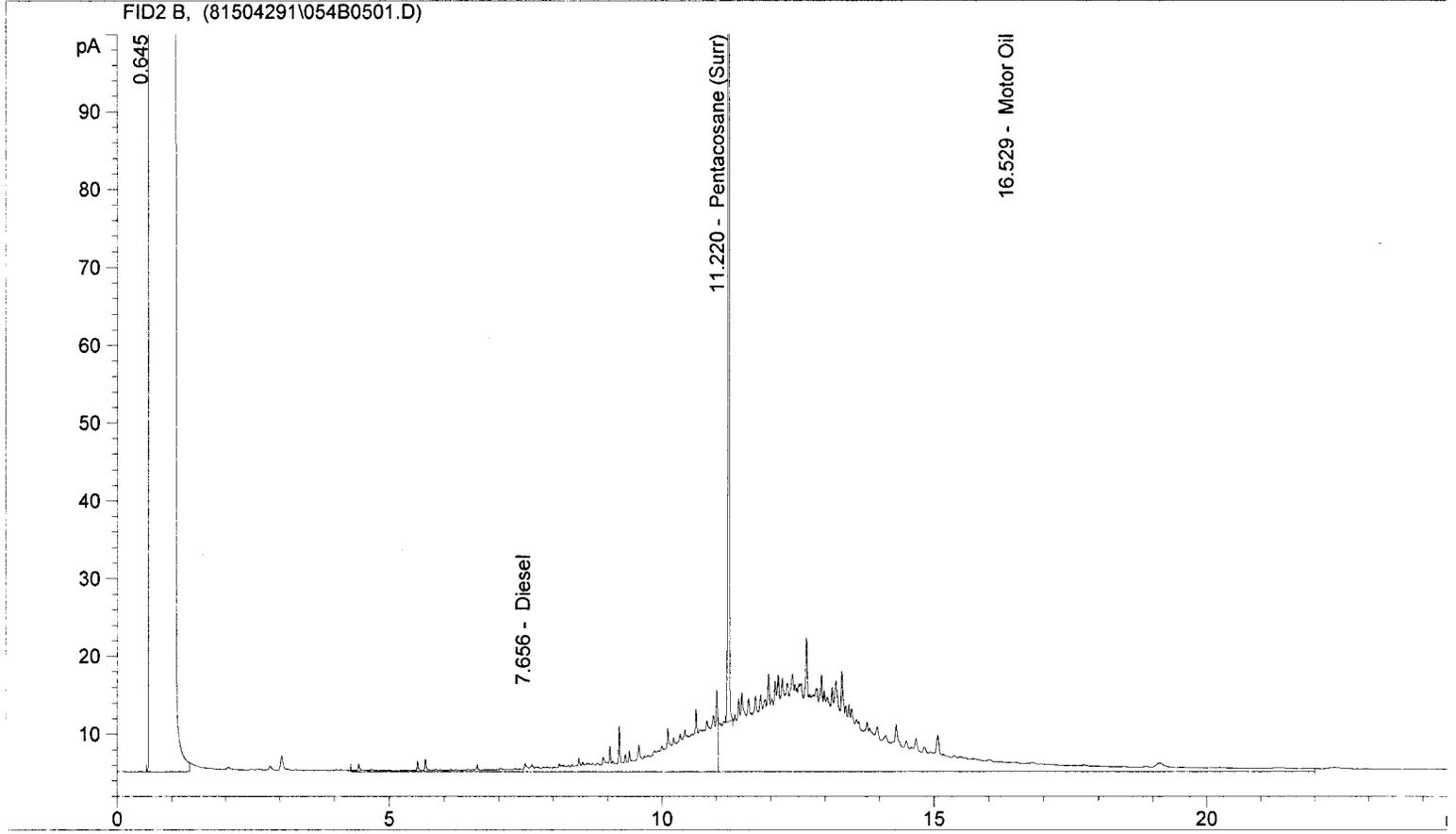
$\Delta < 25 \text{ mg/kg}$

$\text{O} = 316.753 \text{ ug/mL} \times \frac{10 \text{ mL}}{21.03 \text{ g}} = 150 \text{ mg/kg}$ Lube Oil or similar product

REVIEWED BY MS/5/4/15
 & DATE

04.29.15

Sample Name: EV15040134-03 SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	539.352	41.924
11.220		Pentacosane (Surr)	309.214	11.043
16.529		Motor Oil	2078.034	164.341

110 l.

21.03g

$D < 25 \text{ mg/kg}$

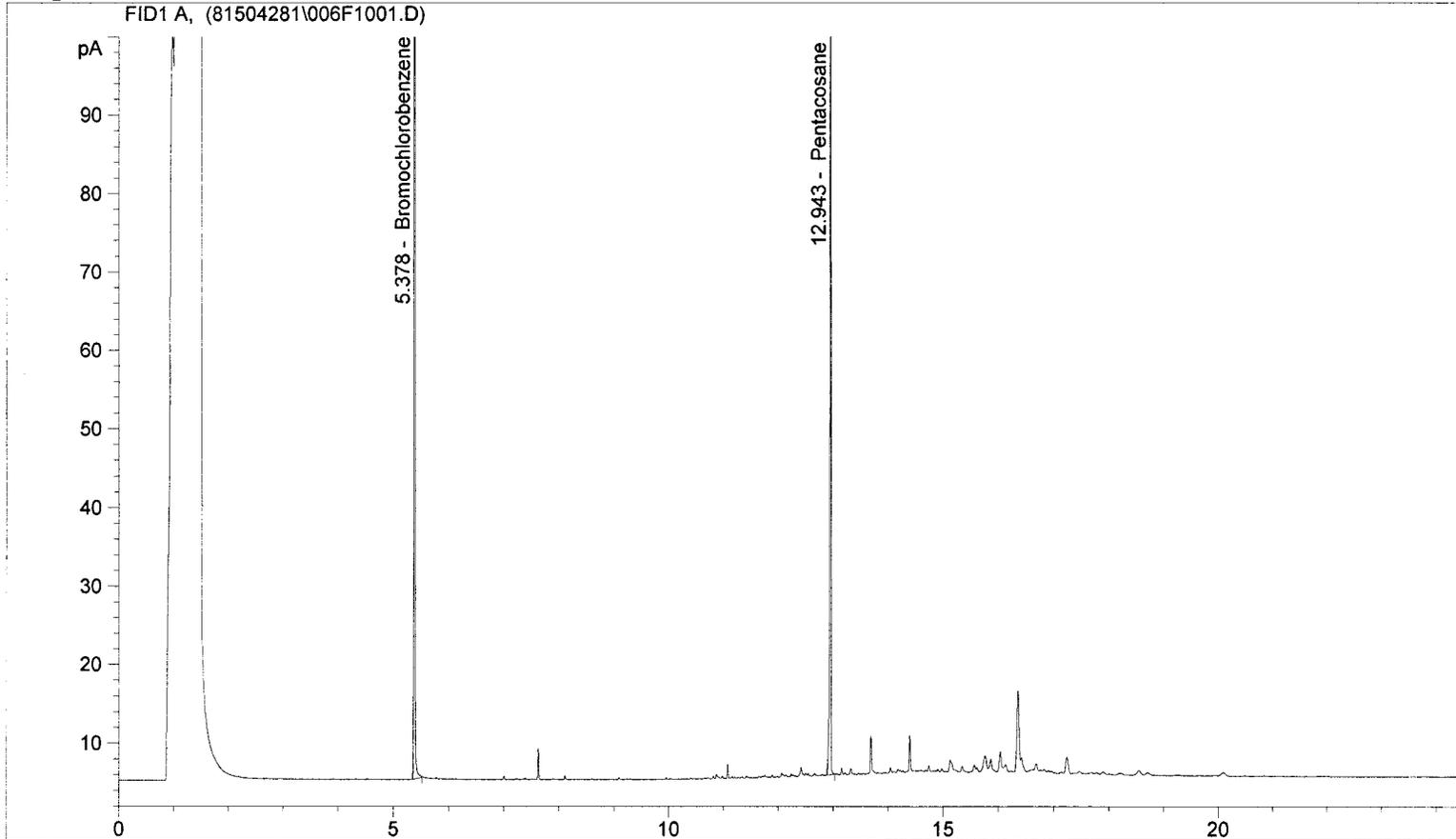
$$O = 164.341 \text{ ug/mL} \times \frac{10 \text{ mL}}{21.03 \text{ g}} = 78 \text{ mg/kg}$$
 Lube Oil or similar product

REVIEWED BY *BS*
 & DATE *5/6/15*

04.29.15 B

Instrument #81 Data File: C:\HPCHEM\1\DATA\81504281\006F1001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDS.M
 Injection Date & Time: 4/28/2015 2:48:47 PM 4/28/2015 2:48:47 PM
 Report Creation: 4/28/2015 5:10:27 PM

Sample Name: EV15040134-04 RX HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.378	FID1 A,	Bromochlorobenzene	329.085	29.086
12.943		Pentacosane	161.568	6.527

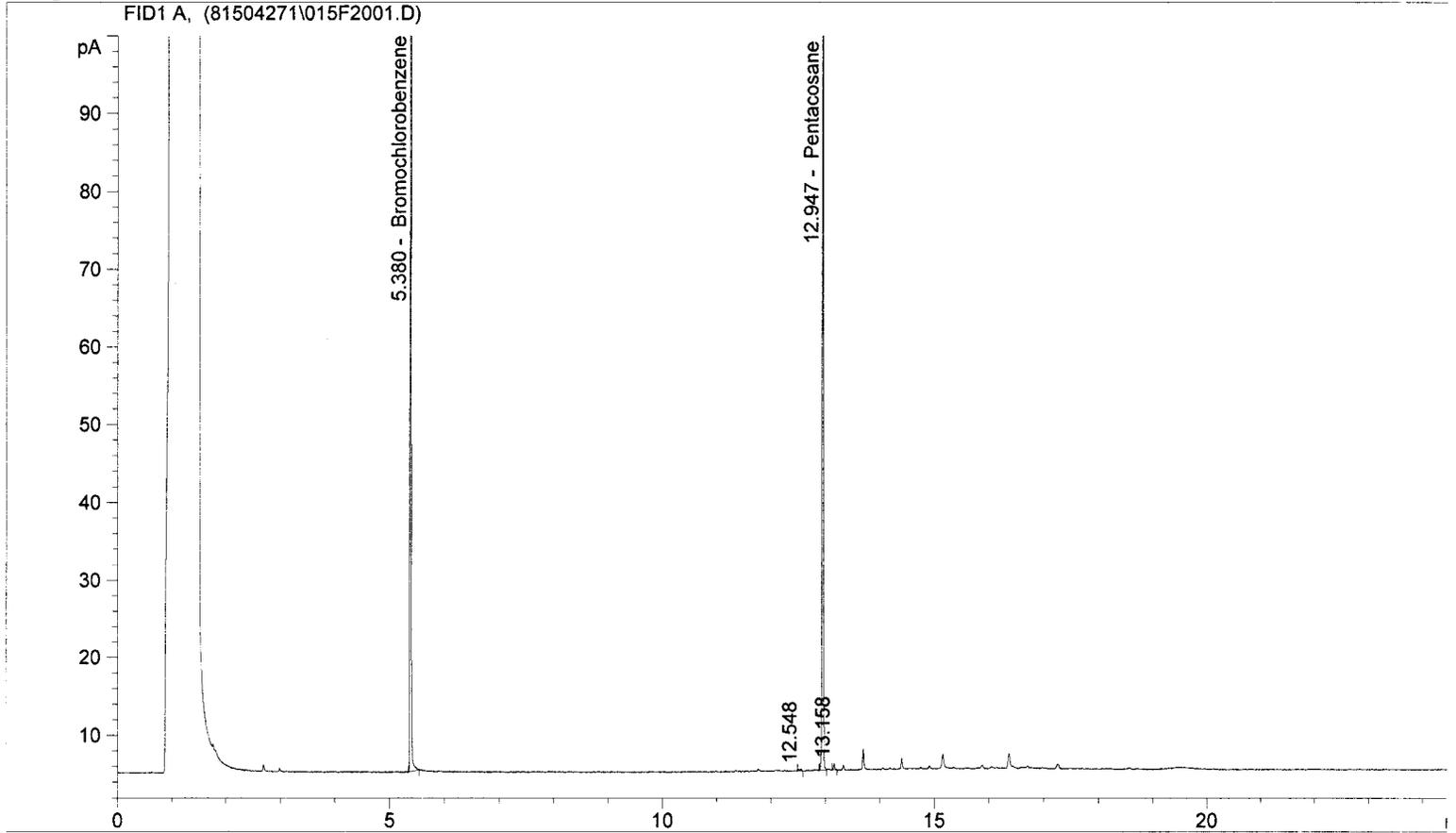
58%
65%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

REVIEWED BY *MB*
 & DATE *4/29/15*

04.28.15

Sample Name: EV15040134-05 HCID



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.380	FID1 A,	Bromochlorobenzene	382.886	33.842
12.947		Pentacosane	183.047	7.395

68%
74%

G < 20 mg/kg
 D < 50 mg/kg
 O < 100 mg/kg

REVIEWED BY *BS*
 & DATE *4/29/15*

04.28.15 EBS



July 21, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On June 24th, 4 samples were received by our laboratory and assigned our laboratory project number EV15060161. The project was identified as your Yakima Landfill / #1148008.030.032. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-01
CLIENT SAMPLE ID	MW-14-062315	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015 1:51:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
PCB-1016	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	06/30/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
Total Dissolved Solids	SM2540C	140	5.0	1	MG/L	06/25/2015	DNT
Chloride	EPA-300.0	6.2	0.092	1	MG/L	06/24/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/24/2015	GAP
Nitrate as N	EPA-300.0	0.25	0.034	1	MG/L	06/24/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/24/2015	GAP
Sulfate	EPA-300.0	3.8	0.26	1	MG/L	06/24/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/30/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	07/01/2015	RAL
Arsenic	EPA-200.8	U	0.45	1	UG/L	07/06/2015	RAL
Barium	EPA-200.8	6.5	1.0	1	UG/L	07/06/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium	EPA-200.8	14000 B	100	1	UG/L	07/06/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium	EPA-200.8	4800	50	1	UG/L	07/06/2015	RAL
Manganese	EPA-200.8	2.6	2.0	1	UG/L	07/06/2015	RAL
Potassium	EPA-200.8	1700	50	1	UG/L	07/06/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium	EPA-200.8	5700	50	1	UG/L	07/06/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	UG/L	07/09/2015	RAL
Barium (Dissolved)	EPA-200.8	6.1	1.0	1	UG/L	07/09/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/09/2015	RAL
Calcium (Dissolved)	EPA-200.8	14000 B	100	1	UG/L	07/09/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/09/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	UG/L	07/09/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	07/09/2015	RAL
Magnesium (Dissolved)	EPA-200.8	5000	50	1	UG/L	07/09/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-01
CLIENT SAMPLE ID	MW-14-062315	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015 1:51:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Manganese (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/09/2015	RAL
Potassium (Dissolved)	EPA-200.8	1700	50	1	UG/L	07/09/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	07/09/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	07/09/2015	RAL
Sodium (Dissolved)	EPA-200.8	5900	50	1	UG/L	07/09/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	63	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	63	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	07/07/2015	CAS
Total Organic Carbon (TOC)	SM5310C	0.88	0.50	1	MG/L	07/08/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	89.8	06/27/2015	EBS
C25	NWTPH-HCID	72.0	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	76.8	06/27/2015	EBS
DCB	EPA-8082	75.0	06/30/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-02
CLIENT SAMPLE ID	MW-15-062315	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/24/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/24/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/24/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/24/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/24/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/24/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/24/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/24/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/24/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/24/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/24/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/24/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/24/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-02
CLIENT SAMPLE ID	MW-15-062315	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/24/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/24/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/24/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/24/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/24/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/24/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/24/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Naphthalene	EPA-8270 SIM	0.016	0.014	1	UG/L	07/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	UG/L	07/01/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/01/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-02
CLIENT SAMPLE ID	MW-15-062315	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0093	1	UG/L	07/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/01/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	UG/L	07/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	UG/L	07/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-02
CLIENT SAMPLE ID	MW-15-062315	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	UG/L	07/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	06/30/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1242	EPA-8082	0.0063	0.0050	1	UG/L	06/30/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-02
CLIENT SAMPLE ID	MW-15-062315	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/07/2015	CAS
Total Dissolved Solids	SM2540C	140	5.0	1	MG/L	06/25/2015	DNT
Chloride	EPA-300.0	7.2	0.092	1	MG/L	06/24/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/24/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/24/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/24/2015	GAP
Sulfate	EPA-300.0	3.2	0.26	1	MG/L	06/24/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/30/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	07/01/2015	RAL
Arsenic	EPA-200.8	0.91	0.45	1	UG/L	07/06/2015	RAL
Barium	EPA-200.8	18	1.0	1	UG/L	07/06/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium	EPA-200.8	17000 B	100	1	UG/L	07/06/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron	EPA-200.8	5500	50	1	UG/L	07/06/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium	EPA-200.8	6700	50	1	UG/L	07/06/2015	RAL
Manganese	EPA-200.8	630	2.0	1	UG/L	07/06/2015	RAL
Potassium	EPA-200.8	2700	50	1	UG/L	07/06/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium	EPA-200.8	8200	50	1	UG/L	07/06/2015	RAL
Arsenic (Dissolved)	EPA-200.8	0.93	0.45	1	UG/L	07/09/2015	RAL
Barium (Dissolved)	EPA-200.8	18	1.0	1	UG/L	07/09/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/09/2015	RAL
Calcium (Dissolved)	EPA-200.8	17000 B	100	1	UG/L	07/09/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/09/2015	RAL
Iron (Dissolved)	EPA-200.8	5100	50	1	UG/L	07/09/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	07/09/2015	RAL
Magnesium (Dissolved)	EPA-200.8	6900	50	1	UG/L	07/09/2015	RAL
Manganese (Dissolved)	EPA-200.8	630	2.0	1	UG/L	07/09/2015	RAL
Potassium (Dissolved)	EPA-200.8	2800	50	1	UG/L	07/09/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	07/09/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-02
CLIENT SAMPLE ID	MW-15-062315	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	07/09/2015	RAL
Sodium (Dissolved)	EPA-200.8	8400	50	1	UG/L	07/09/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	88	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	88	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	0.22	0.050	1	MG/L	07/07/2015	CAS
Total Organic Carbon (TOC)	SM5310C	2.8	0.50	1	MG/L	07/08/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	86.2	06/27/2015	EBS
C25	NWTPH-HCID	67.8	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	77.7	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	98.4	06/24/2015	CCN
Toluene-d8	EPA-8260	103	06/24/2015	CCN
4-Bromofluorobenzene	EPA-8260	100	06/24/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	101	07/01/2015	GAP
Terphenyl-d14	EPA-8270 SIM	80.6	07/01/2015	GAP
2-Fluorophenol	EPA-8270	79.7	07/07/2015	GAP
Phenol-d5	EPA-8270	48.5	07/07/2015	GAP
Nitrobenzene-d5	EPA-8270	76.1	07/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	130 GS1	07/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	88.5	07/07/2015	GAP
Terphenyl-d14	EPA-8270	90.7	07/07/2015	GAP
DCB	EPA-8082	92.0	06/30/2015	CAS
TCMX	EPA-8081	52.0	07/07/2015	CAS
DCB	EPA-8081	65.0	07/07/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

GS1 - Surrogate outside of control limits due to matrix effect.

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-03
CLIENT SAMPLE ID	MW-109-062315	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015 3:01:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/24/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/24/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/24/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/24/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/24/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/24/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/24/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/24/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/24/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/24/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/24/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/24/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/24/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-03
CLIENT SAMPLE ID	MW-109-062315	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015 3:01:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/24/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/24/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/24/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/24/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/24/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/24/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/24/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Naphthalene	EPA-8270 SIM	0.11	0.013	1	UG/L	07/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	0.11	0.020	1	UG/L	07/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	0.036	0.020	1	UG/L	07/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	UG/L	07/01/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/01/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/01/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-03
CLIENT SAMPLE ID	MW-109-062315	DATE RECEIVED:	06/24/2015
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		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	UG/L	07/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/01/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	UG/L	07/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	UG/L	07/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-03
CLIENT SAMPLE ID	MW-109-062315	DATE RECEIVED:	06/24/2015
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	UG/L	07/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
PCB-1016	EPA-8082	U	0.0052	1	UG/L	06/30/2015	CAS
PCB-1221	EPA-8082	U	0.011	1	UG/L	06/30/2015	CAS
PCB-1232	EPA-8082	U	0.0052	1	UG/L	06/30/2015	CAS
PCB-1242	EPA-8082	U	0.0052	1	UG/L	06/30/2015	CAS
PCB-1248	EPA-8082	U	0.0052	1	UG/L	06/30/2015	CAS
PCB-1254	EPA-8082	U	0.0052	1	UG/L	06/30/2015	CAS
PCB-1260	EPA-8082	U	0.0052	1	UG/L	06/30/2015	CAS
A-BHC	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
G-BHC	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
B-BHC	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
D-BHC	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Aldrin	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Chlordane	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Endrin	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-03
CLIENT SAMPLE ID	MW-109-062315	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015 3:01:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	0.013	0.011	1	UG/L	07/07/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Toxaphene	EPA-8081	U	0.52	1	UG/L	07/07/2015	CAS
Total Dissolved Solids	SM2540C	210	5.0	1	MG/L	06/25/2015	DNT
Chloride	EPA-300.0	11	0.092	1	MG/L	06/24/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/24/2015	GAP
Nitrate as N	EPA-300.0	1.7	0.034	1	MG/L	06/24/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/24/2015	GAP
Sulfate	EPA-300.0	14	0.26	1	MG/L	06/24/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/30/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	07/01/2015	RAL
Arsenic	EPA-200.8	U	0.45	1	UG/L	07/06/2015	RAL
Barium	EPA-200.8	9.0	1.0	1	UG/L	07/06/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium	EPA-200.8	25000 B	100	1	UG/L	07/06/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium	EPA-200.8	8400	50	1	UG/L	07/06/2015	RAL
Manganese	EPA-200.8	58	2.0	1	UG/L	07/06/2015	RAL
Potassium	EPA-200.8	3700	50	1	UG/L	07/06/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium	EPA-200.8	12000	50	1	UG/L	07/06/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	UG/L	07/09/2015	RAL
Barium (Dissolved)	EPA-200.8	9.1	1.0	1	UG/L	07/09/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/09/2015	RAL
Calcium (Dissolved)	EPA-200.8	25000 B	100	1	UG/L	07/09/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/09/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	UG/L	07/09/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	07/09/2015	RAL
Magnesium (Dissolved)	EPA-200.8	8800	50	1	UG/L	07/09/2015	RAL
Manganese (Dissolved)	EPA-200.8	57	2.0	1	UG/L	07/09/2015	RAL
Potassium (Dissolved)	EPA-200.8	3800	50	1	UG/L	07/09/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	07/09/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-03
CLIENT SAMPLE ID	MW-109-062315	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015 3:01:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	07/09/2015	RAL
Sodium (Dissolved)	EPA-200.8	12000	50	1	UG/L	07/09/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	110	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	110	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	0.056	0.050	1	MG/L	07/07/2015	CAS
Total Organic Carbon (TOC)	SM5310C	0.97	0.50	1	MG/L	07/08/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	86.5	06/27/2015	EBS
C25	NWTPH-HCID	70.1	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	78.5	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	98.2	06/24/2015	CCN
Toluene-d8	EPA-8260	103	06/24/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.2	06/24/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	101	07/01/2015	GAP
Terphenyl-d14	EPA-8270 SIM	85.4	07/01/2015	GAP
2-Fluorophenol	EPA-8270	79.2	07/07/2015	GAP
Phenol-d5	EPA-8270	48.0	07/07/2015	GAP
Nitrobenzene-d5	EPA-8270	75.6	07/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	133 GS1	07/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	84.6	07/07/2015	GAP
Terphenyl-d14	EPA-8270	89.8	07/07/2015	GAP
DCB	EPA-8082	73.0	06/30/2015	CAS
TCMX	EPA-8081	56.0	07/07/2015	CAS
DCB	EPA-8081	77.0	07/07/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

GS1 - Surrogate outside of control limits due to matrix effect.

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-04
CLIENT SAMPLE ID	Trip Blanks	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/24/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/24/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/24/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/24/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/24/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/24/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/24/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/24/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/24/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/24/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/24/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/24/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/24/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/24/2015	CCN
Toluene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/24/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060161-04
CLIENT SAMPLE ID	Trip Blanks	DATE RECEIVED:	06/24/2015
		COLLECTION DATE:	6/23/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/24/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/24/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/24/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/24/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/24/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/24/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/24/2015	CCN

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	97.6	06/24/2015	CCN
Toluene-d8	EPA-8260	102	06/24/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.9	06/24/2015	CCN

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-062615W - Batch 94803 - Water by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062315W - Batch 94635 - Water by EPA-8260 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/23/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/23/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/23/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/23/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062315W - Batch 94635 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/23/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/23/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/23/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/23/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/23/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-062315W - Batch 94635 - Water by EPA-8260

Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/23/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/23/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/23/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/23/2015	CCN
Toluene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/23/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/23/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/23/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/23/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/23/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/23/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/23/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15060161
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY BLANK RESULTS

MB-062315W - Batch 94635 - Water by EPA-8260

U - Analyte analyzed for but not detected at level above reporting limit.

MB-063015W - Batch 95020 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.015	1	UG/L	07/01/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0097	1	UG/L	07/01/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	UG/L	07/01/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/01/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0098	1	UG/L	07/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.018	1	UG/L	07/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.019	1	UG/L	07/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0073	1	UG/L	07/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	UG/L	07/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.015	1	UG/L	07/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	UG/L	07/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-063015W - Batch 95023 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	UG/L	07/06/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	UG/L	07/06/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-063015W - Batch 95023 - Water by EPA-8270

Hexachloroethane	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/06/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	UG/L	07/06/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.90	1	UG/L	07/06/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	UG/L	07/06/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/06/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/06/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	UG/L	07/06/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Azobenzene	EPA-8270	U	1.6	1	UG/L	07/06/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.81	1	UG/L	07/06/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB1-06/30/2015 - Batch R258167 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING	DILUTION	UNITS	ANALYSIS	ANALYSIS
			LIMITS	FACTOR		DATE	BY
PCB-1016	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	06/30/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	06/30/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/07/2015 - Batch R258169 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING	DILUTION	UNITS	ANALYSIS	ANALYSIS
			LIMITS	FACTOR		DATE	BY
A-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/07/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-258169 - Batch R258169 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING	DILUTION	UNITS	ANALYSIS	ANALYSIS
			LIMITS	FACTOR		DATE	BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	06/25/2015	DNT



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15060161
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY BLANK RESULTS

MBLK-258169 - Batch R258169 - Water by SM2540C

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-257692 - Batch R257692 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	06/24/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/24/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/24/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/24/2015	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	06/24/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-6302015 - Batch R257364 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.11	1	UG/L	06/30/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-257683 - Batch R257683 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	07/01/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-070115W - Batch 94855 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	0.45	1	UG/L	07/06/2015	RAL
Barium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium	EPA-200.8	150	100	1	UG/L	07/06/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Manganese	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Potassium	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15060161
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY BLANK RESULTS

MB-070115W - Batch 94855 - Water by EPA-200.8

U - Analyte analyzed for but not detected at level above reporting limit.

MB-070115W - Batch 94856 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	UG/L	07/06/2015	RAL
Barium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium (Dissolved)	EPA-200.8	150	100	1	UG/L	07/06/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium (Dissolved)	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Potassium (Dissolved)	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium (Dissolved)	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/02/2015 - Batch R258163 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	07/02/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/07/2015 - Batch R258161 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	07/07/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/08/2015 - Batch R258157 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	07/08/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
		ALS SDG#:	EV15060161
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Jeffrey Fellows		
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032		

LABORATORY BLANK RESULTS

MB2-07/08/2015 - Batch R258157 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	07/08/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 94635 - Water by EPA-8260 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Trichloroethene - BS	EPA-8260 SIM	92.1			06/23/2015	CCN
Trichloroethene - BSD	EPA-8260 SIM	92.0	0		06/23/2015	CCN

ALS Test Batch ID: 94635 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	89.0			06/23/2015	CCN
1,1-Dichloroethene - BSD	EPA-8260	86.8	3		06/23/2015	CCN
Benzene - BS	EPA-8260	95.2			06/23/2015	CCN
Benzene - BSD	EPA-8260	95.1	0		06/23/2015	CCN
Toluene - BS	EPA-8260	95.3			06/23/2015	CCN
Toluene - BSD	EPA-8260	96.0	1		06/23/2015	CCN
Chlorobenzene - BS	EPA-8260	98.5			06/23/2015	CCN
Chlorobenzene - BSD	EPA-8260	101	2		06/23/2015	CCN

ALS Test Batch ID: 95023 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	35.6			07/06/2015	GAP
Phenol - BSD	EPA-8270	37.9	6		07/07/2015	GAP
2-Chlorophenol - BS	EPA-8270	90.8			07/06/2015	GAP
2-Chlorophenol - BSD	EPA-8270	94.9	4		07/07/2015	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	98.8			07/06/2015	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	104	5		07/07/2015	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	92.3			07/06/2015	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	96.6	5		07/07/2015	GAP
4-Nitrophenol - BS	EPA-8270	19.5			07/06/2015	GAP
4-Nitrophenol - BSD	EPA-8270	22.6	15		07/07/2015	GAP
2,4-Dinitrotoluene - BS	EPA-8270	71.7			07/06/2015	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	77.1	7		07/07/2015	GAP
Pyrene - BS	EPA-8270	114			07/06/2015	GAP
Pyrene - BSD	EPA-8270	119	5		07/07/2015	GAP

ALS Test Batch ID: R258167 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	82.0			06/30/2015	CAS
PCB-1016 - BSD	EPA-8082	88.0	7		06/30/2015	CAS
PCB-1260 - BS	EPA-8082	101			06/30/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1260 - BSD	EPA-8082	97.5	4		06/30/2015	CAS

ALS Test Batch ID: R258169 - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	82.0			07/07/2015	CAS
A-BHC - BSD	EPA-8081	74.5	10		07/07/2015	CAS
G-BHC - BS	EPA-8081	80.5			07/07/2015	CAS
G-BHC - BSD	EPA-8081	74.0	8		07/07/2015	CAS
B-BHC - BS	EPA-8081	80.0			07/07/2015	CAS
B-BHC - BSD	EPA-8081	75.0	6		07/07/2015	CAS
Heptachlor - BS	EPA-8081	75.0			07/07/2015	CAS
Heptachlor - BSD	EPA-8081	64.5	15		07/07/2015	CAS
D-BHC - BS	EPA-8081	82.5			07/07/2015	CAS
D-BHC - BSD	EPA-8081	77.0	7		07/07/2015	CAS
Aldrin - BS	EPA-8081	67.5			07/07/2015	CAS
Aldrin - BSD	EPA-8081	57.5	16		07/07/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	79.5			07/07/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	72.0	10		07/07/2015	CAS
Chlordane - BS	EPA-8081	77.0			07/07/2015	CAS
Chlordane - BSD	EPA-8081	68.5	12		07/07/2015	CAS
Endosulfan I - BS	EPA-8081	65.0			07/07/2015	CAS
Endosulfan I - BSD	EPA-8081	60.0	8		07/07/2015	CAS
4,4'-DDE - BS	EPA-8081	78.0			07/07/2015	CAS
4,4'-DDE - BSD	EPA-8081	70.0	11		07/07/2015	CAS
Dieldrin - BS	EPA-8081	80.0			07/07/2015	CAS
Dieldrin - BSD	EPA-8081	73.0	9		07/07/2015	CAS
Endrin - BS	EPA-8081	83.0			07/07/2015	CAS
Endrin - BSD	EPA-8081	77.0	8		07/07/2015	CAS
4,4'-DDD - BS	EPA-8081	75.5			07/07/2015	CAS
4,4'-DDD - BSD	EPA-8081	70.0	8		07/07/2015	CAS
Endosulfan II - BS	EPA-8081	69.0			07/07/2015	CAS
Endosulfan II - BSD	EPA-8081	64.0	8		07/07/2015	CAS
4,4'-DDT - BS	EPA-8081	74.0			07/07/2015	CAS
4,4'-DDT - BSD	EPA-8081	67.5	9		07/07/2015	CAS
Endrin Aldehyde - BS	EPA-8081	62.0			07/07/2015	CAS
Endrin Aldehyde - BSD	EPA-8081	61.5	1		07/07/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	76.0			07/07/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	72.0	5		07/07/2015	CAS
Methoxychlor - BS	EPA-8081	70.0			07/07/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Methoxychlor - BSD	EPA-8081	64.5	8		07/07/2015	CAS
Hexachlorobenzene - BS	EPA-8081	83.0			07/07/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	74.0	11		07/07/2015	CAS
Toxaphene - BS	EPA-8081	89.4			07/07/2015	CAS
Toxaphene - BSD	EPA-8081	81.9	9		07/07/2015	CAS

ALS Test Batch ID: R258169 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	111			06/25/2015	DNT

ALS Test Batch ID: R257692 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	96.5			06/24/2015	GAP
Chloride - BSD	EPA-300.0	96.5	0		06/24/2015	GAP
Fluoride - BS	EPA-300.0	95.5			06/24/2015	GAP
Fluoride - BSD	EPA-300.0	103	8		06/24/2015	GAP
Nitrate as N - BS	EPA-300.0	102			06/24/2015	GAP
Nitrate as N - BSD	EPA-300.0	101	0		06/24/2015	GAP
Nitrite as N - BS	EPA-300.0	90.0			06/24/2015	GAP
Nitrite as N - BSD	EPA-300.0	89.5	1		06/24/2015	GAP
Sulfate - BS	EPA-300.0	93.0			06/24/2015	GAP
Sulfate - BSD	EPA-300.0	106	14		06/24/2015	GAP

ALS Test Batch ID: R257364 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	102			06/30/2015	RAL
Mercury - BSD	EPA-7470	99.0	3		06/30/2015	RAL

ALS Test Batch ID: R257683 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	104			07/01/2015	RAL
Mercury (Dissolved) - BSD	EPA-7470	101	3		07/01/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 94855 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	94.6			07/06/2015	RAL
Arsenic - BSD	EPA-200.8	96.5	2		07/06/2015	RAL
Barium - BS	EPA-200.8	103			07/06/2015	RAL
Barium - BSD	EPA-200.8	97.6	5		07/06/2015	RAL
Cadmium - BS	EPA-200.8	98.4			07/06/2015	RAL
Cadmium - BSD	EPA-200.8	97.6	1		07/06/2015	RAL
Calcium - BS	EPA-200.8	106			07/06/2015	RAL
Calcium - BSD	EPA-200.8	96.8	9		07/06/2015	RAL
Chromium - BS	EPA-200.8	97.9			07/06/2015	RAL
Chromium - BSD	EPA-200.8	94.9	3		07/06/2015	RAL
Iron - BS	EPA-200.8	97.8			07/06/2015	RAL
Iron - BSD	EPA-200.8	96.9	1		07/06/2015	RAL
Lead - BS	EPA-200.8	97.2			07/06/2015	RAL
Lead - BSD	EPA-200.8	95.4	2		07/06/2015	RAL
Magnesium - BS	EPA-200.8	96.0			07/06/2015	RAL
Magnesium - BSD	EPA-200.8	93.6	3		07/06/2015	RAL
Manganese - BS	EPA-200.8	99.8			07/06/2015	RAL
Manganese - BSD	EPA-200.8	97.6	2		07/06/2015	RAL
Potassium - BS	EPA-200.8	95.5			07/06/2015	RAL
Potassium - BSD	EPA-200.8	93.6	2		07/06/2015	RAL
Selenium - BS	EPA-200.8	92.5			07/06/2015	RAL
Selenium - BSD	EPA-200.8	95.2	3		07/06/2015	RAL
Silver - BS	EPA-200.8	98.0			07/06/2015	RAL
Silver - BSD	EPA-200.8	97.6	0		07/06/2015	RAL
Sodium - BS	EPA-200.8	94.2			07/06/2015	RAL
Sodium - BSD	EPA-200.8	92.4	2		07/06/2015	RAL

ALS Test Batch ID: 94856 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	94.6			07/06/2015	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	96.5	2		07/06/2015	RAL
Barium (Dissolved) - BS	EPA-200.8	103			07/06/2015	RAL
Barium (Dissolved) - BSD	EPA-200.8	97.6	5		07/06/2015	RAL
Cadmium (Dissolved) - BS	EPA-200.8	98.4			07/06/2015	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	97.6	1		07/06/2015	RAL
Calcium (Dissolved) - BS	EPA-200.8	106			07/06/2015	RAL
Calcium (Dissolved) - BSD	EPA-200.8	96.8	9		07/06/2015	RAL
Chromium (Dissolved) - BS	EPA-200.8	97.9			07/06/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15060161
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chromium (Dissolved) - BSD	EPA-200.8	94.9	3		07/06/2015	RAL
Iron (Dissolved) - BS	EPA-200.8	97.8			07/06/2015	RAL
Iron (Dissolved) - BSD	EPA-200.8	96.9	1		07/06/2015	RAL
Lead (Dissolved) - BS	EPA-200.8	97.2			07/06/2015	RAL
Lead (Dissolved) - BSD	EPA-200.8	95.4	2		07/06/2015	RAL
Magnesium (Dissolved) - BS	EPA-200.8	96.0			07/06/2015	RAL
Magnesium (Dissolved) - BSD	EPA-200.8	93.6	3		07/06/2015	RAL
Manganese (Dissolved) - BS	EPA-200.8	99.8			07/06/2015	RAL
Manganese (Dissolved) - BSD	EPA-200.8	97.6	2		07/06/2015	RAL
Potassium (Dissolved) - BS	EPA-200.8	95.5			07/06/2015	RAL
Potassium (Dissolved) - BSD	EPA-200.8	93.6	2		07/06/2015	RAL
Selenium (Dissolved) - BS	EPA-200.8	92.5			07/06/2015	RAL
Selenium (Dissolved) - BSD	EPA-200.8	95.2	3		07/06/2015	RAL
Silver (Dissolved) - BS	EPA-200.8	98.0			07/06/2015	RAL
Silver (Dissolved) - BSD	EPA-200.8	97.6	0		07/06/2015	RAL
Sodium (Dissolved) - BS	EPA-200.8	94.2			07/06/2015	RAL
Sodium (Dissolved) - BSD	EPA-200.8	92.4	2		07/06/2015	RAL

ALS Test Batch ID: R258163 - Water by SM2320B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total - BS	SM2320B	105			07/02/2015	CAS

ALS Test Batch ID: R258161 - Water by EPA-350.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N 5X Dilution - BS	EPA-350.1	98.4			07/07/2015	CAS

ALS Test Batch ID: R258157 - Water by SM5310C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - BS	SM5310C	96.0			07/08/2015	CAS
Total Organic Carbon (TOC) - BS	SM5310C	94.9			07/08/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 7/21/2015	ALS SDG#: EV15060161
		WDOE ACCREDITATION: C601	
CLIENT CONTACT:	Jeffrey Fellows		
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032		

MATRIX SPIKE RESULTS

ALS Test Batch ID: R258157 - Water

Parent Sample: MW-14-062315

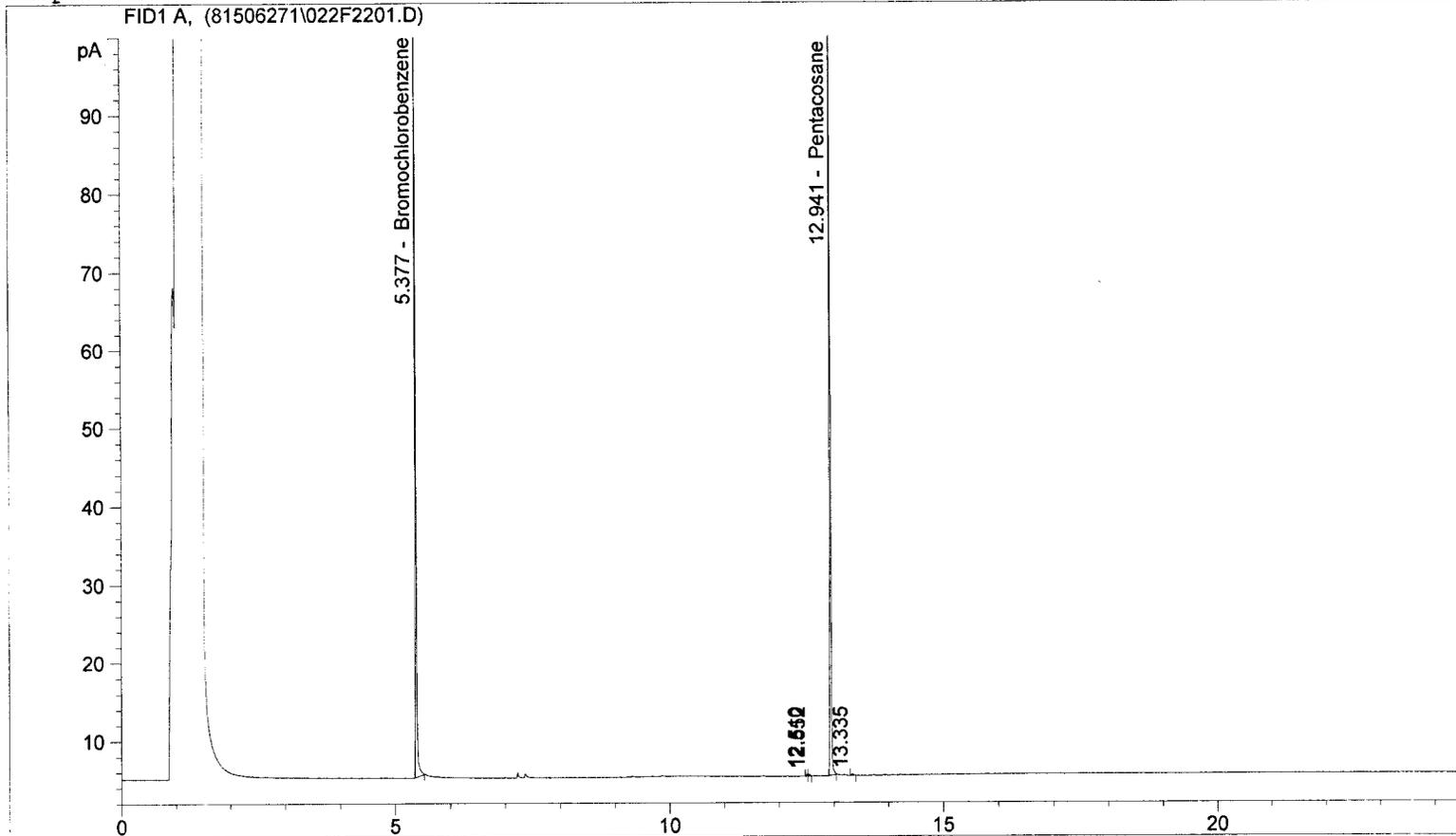
SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - MS	SM5310C	0.88	25.0	26.6		103		07/08/2015	CAS

APPROVED BY



Laboratory Director

Sample Name: EV15060161-01 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.377	FID1 A,	Bromochlorobenzene	129.759	22.449
12.941		Pentacosane	141.913	7.205

90%
72%

G < 130 ng/L
 D < 310 ng/L

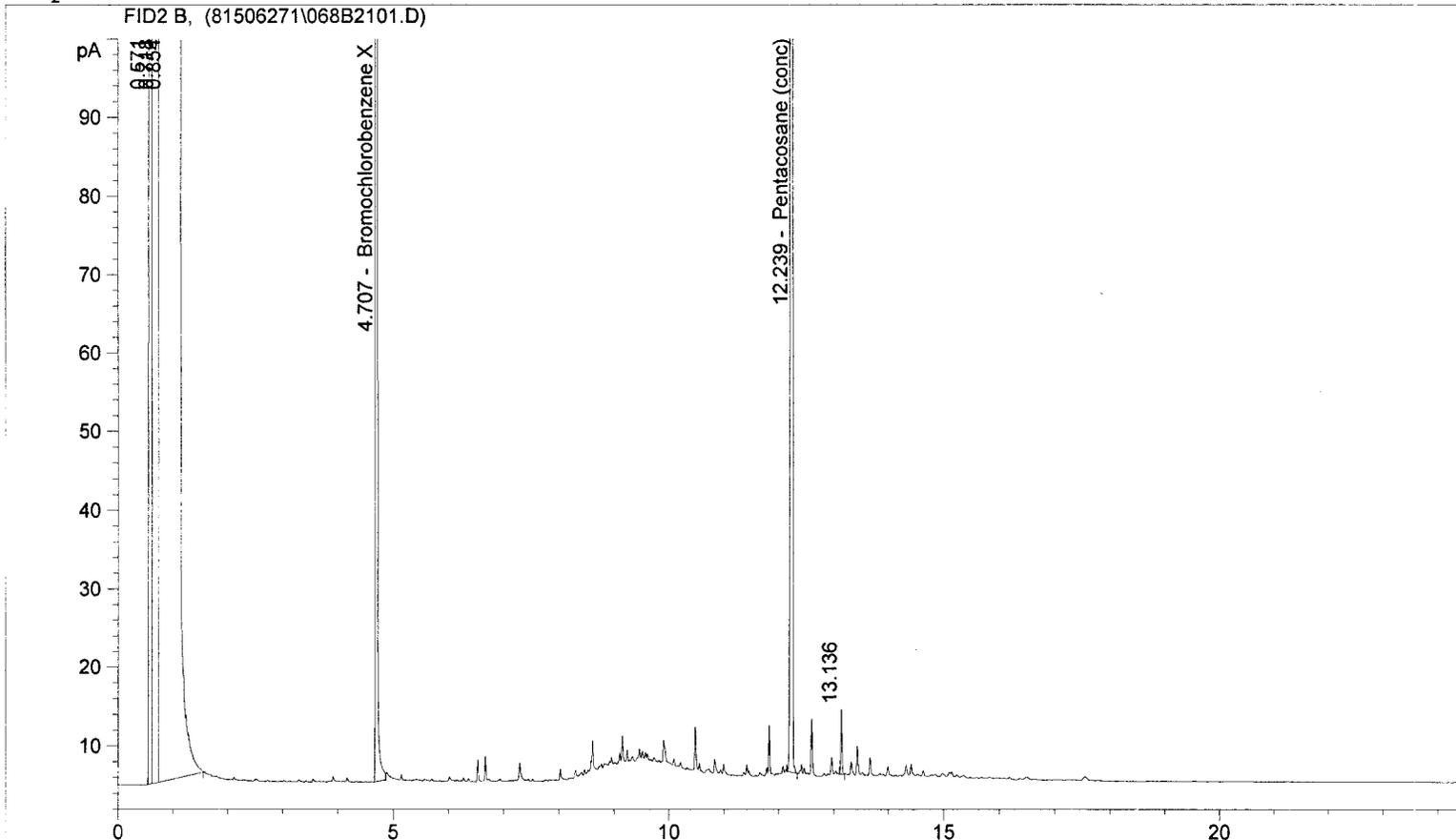
REVIEWED BY MS
 E 7/2/15

08.30.158

Sample Name: EV15060161-01 1 ML

->

FID2 B, (81506271\068B2101.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.707	FID2 B,	Bromochlorobenzene X	2552.750	198.757
12.239		Pentacosane (conc)	2959.762	76.819

77%

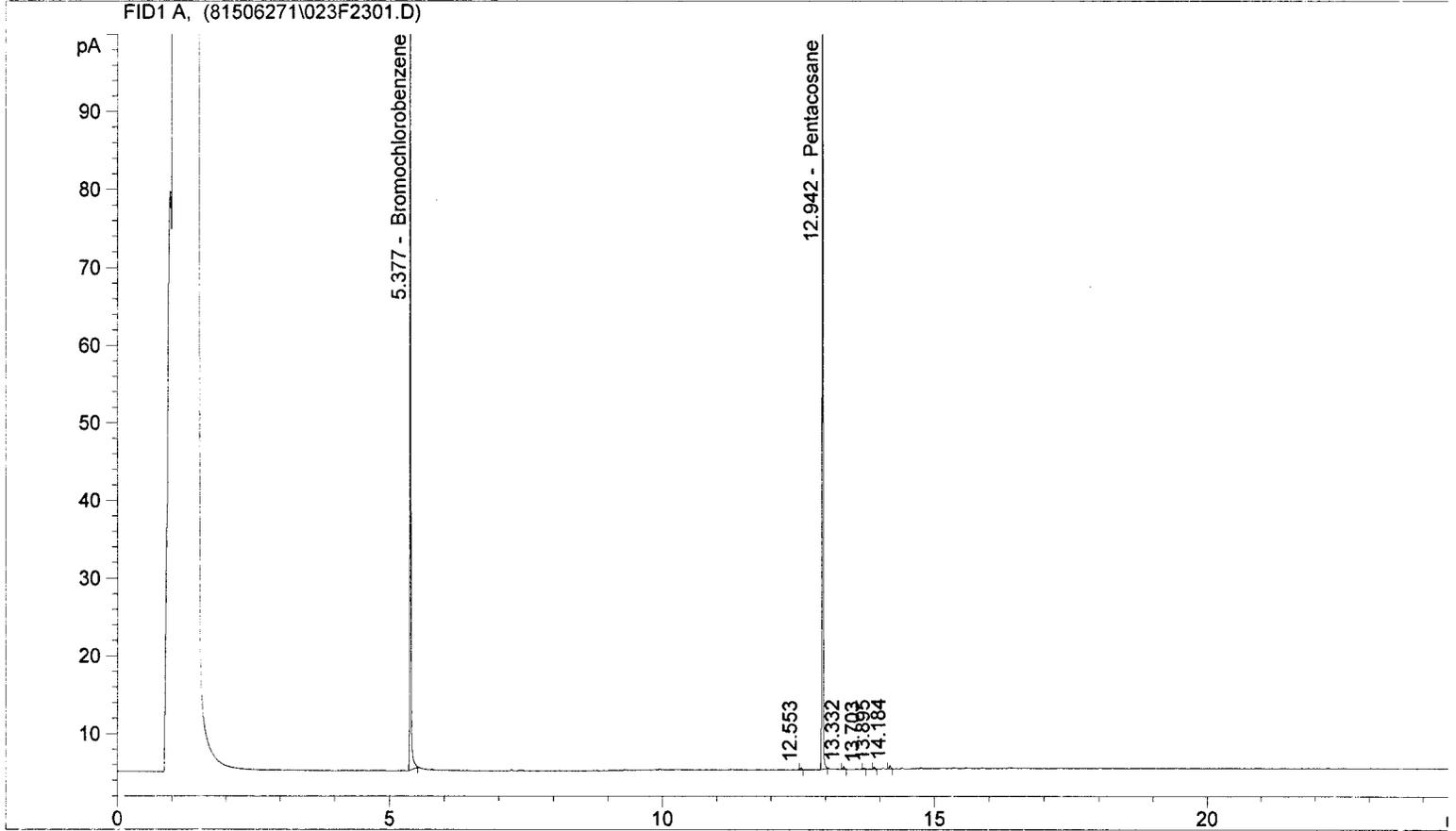
0 < 310 ug/L

REVIEWED BY [Signature] 7/2/15

ES/08-20

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\023F2301.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 6/27/2015 8:44:56 PM 6/27/2015 8:44:56 PM
 Report Creation: 6/29/2015 11:19:44 AM

Sample Name: EV15060161-02 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.377	FID1 A,	Bromochlorobenzene	124.502	21.539
12.942		Pentacosane	133.502	6.778

80%
68%

G < 130 ug/L
 D < 310 ug/L

RE... D BY [Signature] / 7/12/15
 E

06.29.15ES

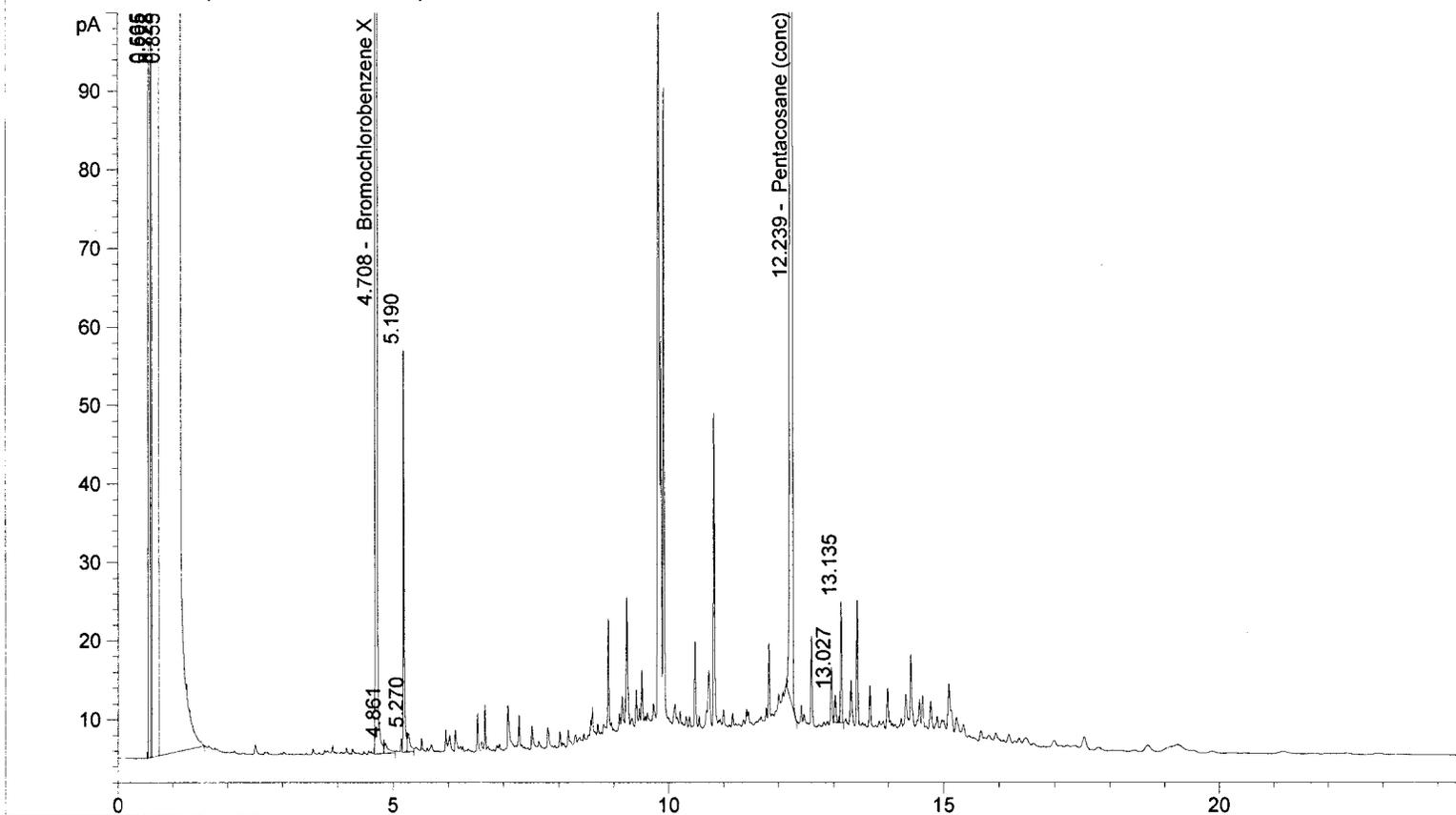
ES

02

Sample Name: EV15060161-03 1 ML

->

FID2 B, (81506271\069B2201.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene X	2821.099	219.651
12.239		Pentacosane (conc)	2993.773	77.702

78%

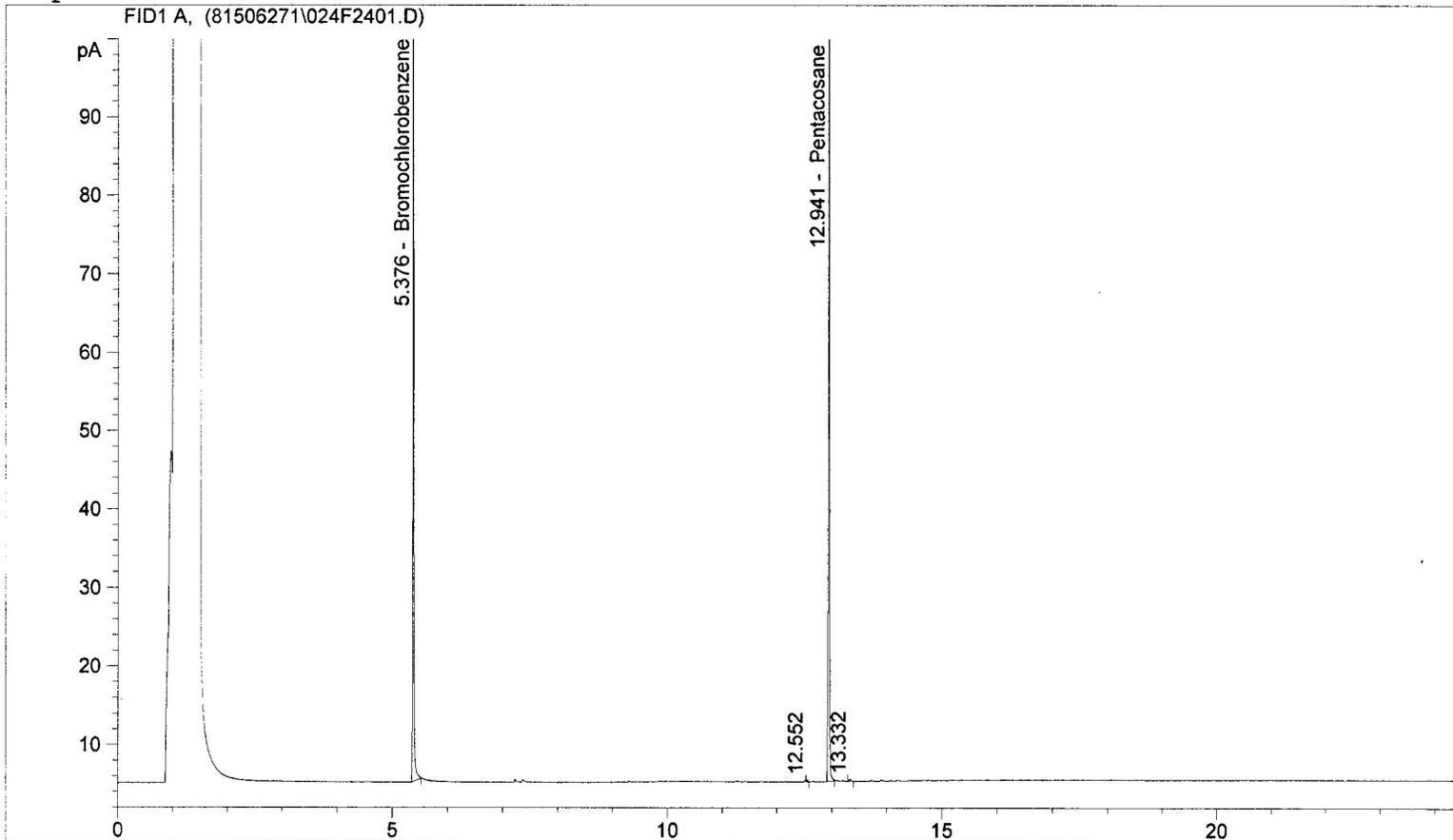
$0 < 310 \mu\text{g/L}$

RE D BY MS
E 7/2/15

06.30.15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\024F2401.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 6/27/2015 9:20:26 PM 6/27/2015 9:20:26 PM
 Report Creation: 6/29/2015 11:19:57 AM

Sample Name: EV15060161-03 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.376	FID1 A,	Bromochlorobenzene	125.024	21.630
12.941		Pentacosane	138.098	7.011

87%
70%

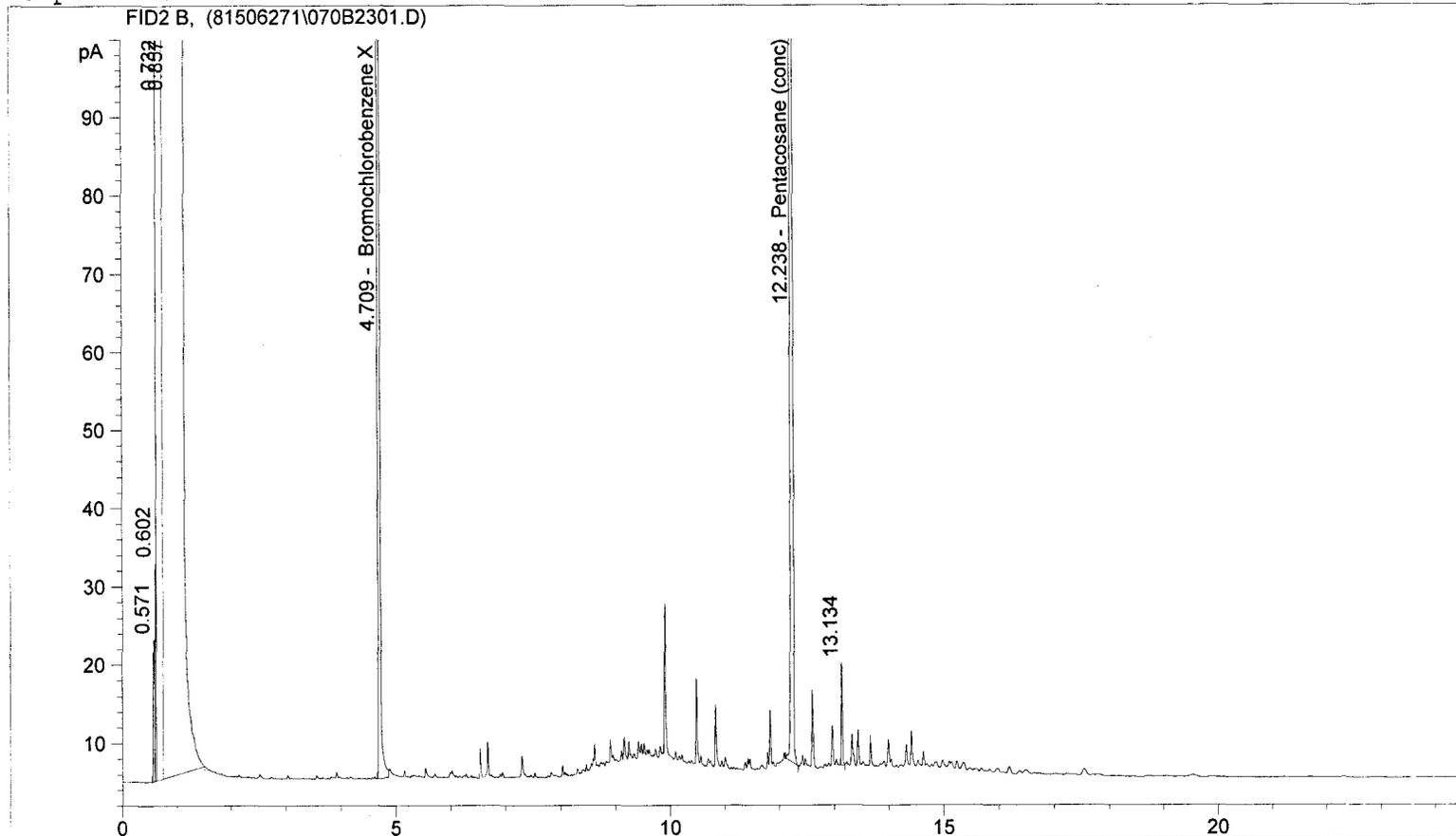
G < 130 ug/L
 D < 310 ug/L

RE D BY MS / 7/12/15
 E

06 30 15 ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\070B2301.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 6/27/2015 9:20:26 PM 6/27/2015 9:20:26 PM
 Report Creation: 6/29/2015 11:43:30 AM

Sample Name: EV15060161-03 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.709	FID2 B,	Bromochlorobenzene X	2801.268	218.107
12.238		Pentacosane (conc)	3024.901	78.510

79%

0 < 310 µg/L

RE	BY	MS
E		7/12/15

02-28-15



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080

Chain-of-Custody Record

EV/5060161

Date 6/23/15
Page 1 of 1

Project Name Closed Yakima LF Project No. 1148008.030.032

Project Location/Event Closed City of Yakima LF, WA / 4th Quarter GW

Sampler's Name Stephanie Renardo, Shane Kostka, Keenan Mussie

Project Contact Jeffrey Fellows, Stephanie Renardo

Send Results To J. Fellows, A. Halvorsen, K. Schultz

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters	Observations/Comments
1 MW-14-062315	6/23/15	1351	AG	9	Metals (Total Dissolved) Alkalinity/Bicarbonate Ammonia/TOC Chlorinated Hydrocarbons PCBs VOC 2 SVOC PAH TRH-HCTD TRH-DX TPH-G	<input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion NWTPH-Dx - run acid wash silica gel cleanup
2 MW-15-062315	6/23/15	1400	AG	14		
3 MW-10A-062315	6/23/15	1501	AG	14		
4 Trip Blanks	—	—	AG	2		

Note - Samples collected for dissolved metals have been field filtered.

Special Shipment/Handling or Storage Requirements On ICE Method of Shipment Fed Ex

<p>Relinquished by <u>Stephanie Renardo</u> Signature <u>[Signature]</u> Printed Name <u>Stephanie Renardo</u> Company <u>Landau Associates</u> Date <u>6/23/15</u> Time <u>1600</u></p>	<p>Relinquished by <u>Shawn Robinson</u> Signature <u>[Signature]</u> Printed Name <u>Shawn Robinson</u> Company <u>ALS</u> Date <u>6/24/15</u> Time <u>0955</u></p>
<p>Received by <u>Stephanie Renardo</u> Signature <u>[Signature]</u> Printed Name <u>Stephanie Renardo</u> Company <u>Landau Associates</u> Date <u>6/23/15</u> Time <u>1600</u></p>	<p>Received by <u>Shawn Robinson</u> Signature <u>[Signature]</u> Printed Name <u>Shawn Robinson</u> Company <u>ALS</u> Date <u>6/24/15</u> Time <u>0955</u></p>

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV15060161

Project: Closed Yakima LF / #1148008.030.032

Received Date: 6/24/15 Received Time: 9:55am By: SM

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express Priority overnight

	Yes	No	N/A
Were custody seals on outside of sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1</u> each			
Where? <u>on Top of cooler</u>			
Custody seal date: <u>6/23/15</u> Seal name: <u>Landau</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: None

Temperature of cooler upon receipt: 1.2°C, 4.9°C Cold Cool Ambient N/A
Both on ice

Explain any discrepancies: _____

Was client contacted? Who was called? By whom? Date:

Outcome of call: _____



July 21, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On June 25th, 11 samples were received by our laboratory and assigned our laboratory project number EV15060175. The project was identified as your Yakima Landfill / #1148008.030.032. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-01
CLIENT SAMPLE ID	MW-9A-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 9:37:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-01
CLIENT SAMPLE ID	MW-9A-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 9:37:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

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CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-01
CLIENT SAMPLE ID	MW-9A-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 9:37:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	UG/L	07/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	UG/L	07/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
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CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-01
CLIENT SAMPLE ID	MW-9A-062415	DATE RECEIVED:	06/25/2015
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	UG/L	07/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.014	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
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CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-01
CLIENT SAMPLE ID	MW-9A-062415	DATE RECEIVED:	06/25/2015
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/07/2015	CAS
Total Dissolved Solids	SM2540C	140	5.0	1	MG/L	06/25/2015	DNT
Chloride	EPA-300.0	12	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	4.0	0.34	10	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	12	2.6	10	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	0.86 B	0.45	1	UG/L	06/26/2015	RAL
Barium	EPA-200.8	8.1	1.0	1	UG/L	06/26/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/26/2015	RAL
Calcium	EPA-200.8	22000 B	100	1	UG/L	06/26/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/26/2015	RAL
Iron	EPA-200.8	U	50	1	UG/L	06/26/2015	RAL
Lead	EPA-200.8	0.32 B	0.28	1	UG/L	06/26/2015	RAL
Magnesium	EPA-200.8	6700	50	1	UG/L	06/26/2015	RAL
Manganese	EPA-200.8	U	2.0	1	UG/L	06/26/2015	RAL
Potassium	EPA-200.8	3100	50	1	UG/L	06/26/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/26/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/26/2015	RAL
Sodium	EPA-200.8	11000	50	1	UG/L	06/26/2015	RAL
Arsenic (Dissolved)	EPA-200.8	1.1	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	8.3	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	23000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	7600	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	3400	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-01
CLIENT SAMPLE ID	MW-9A-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 9:37:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	13000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	85	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	85	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.3	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	108	06/27/2015	EBS
C25	NWTPH-HCID	84.5	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	73.6	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	96.9	06/26/2015	CCN
Toluene-d8	EPA-8260	102	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.5	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	93.0	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	84.0	07/06/2015	GAP
2-Fluorophenol	EPA-8270	74.1	07/08/2015	GAP
Phenol-d5	EPA-8270	45.8	07/08/2015	GAP
Nitrobenzene-d5	EPA-8270	73.9	07/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	114	07/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	84.2	07/08/2015	GAP
Terphenyl-d14	EPA-8270	86.1	07/08/2015	GAP
DCB	EPA-8082	70.0	07/06/2015	CAS
TCMX	EPA-8081	73.0	07/07/2015	CAS
DCB	EPA-8081	71.0	07/07/2015	CAS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-02
CLIENT SAMPLE ID	DUP2-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 9:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-02
CLIENT SAMPLE ID	DUP2-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 9:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0091	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-02
CLIENT SAMPLE ID	DUP2-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 9:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.88	1	UG/L	07/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.84	1	UG/L	07/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-02
CLIENT SAMPLE ID	DUP2-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 9:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	UG/L	07/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
PCB-1016	EPA-8082	U	0.0051	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.011	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0051	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0051	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0051	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0051	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0051	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
G-BHC	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
B-BHC	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
D-BHC	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Aldrin	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Chlordane	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Endrin	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
4,4'-DDD	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-02
CLIENT SAMPLE ID	DUP2-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 9:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	UG/L	07/07/2015	CAS
Toxaphene	EPA-8081	U	0.51	1	UG/L	07/07/2015	CAS
Total Dissolved Solids	SM2540C	160	5.0	1	MG/L	06/25/2015	DNT
Chloride	EPA-300.0	10	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	4.6	2.6	10	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	1.6 B	0.45	1	UG/L	06/26/2015	RAL
Barium	EPA-200.8	22	1.0	1	UG/L	06/26/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/26/2015	RAL
Calcium	EPA-200.8	25000 B	100	1	UG/L	06/26/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/26/2015	RAL
Iron	EPA-200.8	8300	50	1	UG/L	06/26/2015	RAL
Lead	EPA-200.8	0.30 B	0.28	1	UG/L	06/26/2015	RAL
Magnesium	EPA-200.8	9500	50	1	UG/L	06/26/2015	RAL
Manganese	EPA-200.8	430	2.0	1	UG/L	06/26/2015	RAL
Potassium	EPA-200.8	3300	50	1	UG/L	06/26/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/26/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/26/2015	RAL
Sodium	EPA-200.8	16000	50	1	UG/L	06/26/2015	RAL
Arsenic (Dissolved)	EPA-200.8	1.2	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	24	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	27000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	9200	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	11000	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	480	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	3600	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-02
CLIENT SAMPLE ID	DUP2-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 9:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	18000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	150	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	150	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	0.29	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	2.1	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	102	06/27/2015	EBS
C25	NWTPH-HCID	81.1	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	72.1	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	97.7	06/26/2015	CCN
Toluene-d8	EPA-8260	102	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.8	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	97.8	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	84.8	07/06/2015	GAP
2-Fluorophenol	EPA-8270	83.6	07/08/2015	GAP
Phenol-d5	EPA-8270	53.6	07/08/2015	GAP
Nitrobenzene-d5	EPA-8270	80.2	07/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	127 GS1	07/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	90.2	07/08/2015	GAP
Terphenyl-d14	EPA-8270	91.5	07/08/2015	GAP
DCB	EPA-8082	87.0	07/06/2015	CAS
TCMX	EPA-8081	73.0	07/07/2015	CAS
DCB	EPA-8081	88.0	07/07/2015	CAS

GS1 - Surrogate outside of control limits due to matrix effect.

U - Analyte analyzed for but not detected at level above reporting limit.

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-03
CLIENT SAMPLE ID	MW-16-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 10:12:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
Total Dissolved Solids	SM2540C	510	5.0	1	MG/L	06/25/2015	DNT
Chloride	EPA-300.0	21	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	2.9	0.34	10	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	160	2.6	10	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	0.94 B	0.45	1	UG/L	06/26/2015	RAL
Barium	EPA-200.8	47	1.0	1	UG/L	06/26/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/26/2015	RAL
Calcium	EPA-200.8	90000 B	100	1	UG/L	06/26/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/26/2015	RAL
Iron	EPA-200.8	470	50	1	UG/L	06/26/2015	RAL
Lead	EPA-200.8	0.36 B	0.28	1	UG/L	06/26/2015	RAL
Magnesium	EPA-200.8	16000	50	1	UG/L	06/26/2015	RAL
Manganese	EPA-200.8	140	2.0	1	UG/L	06/26/2015	RAL
Potassium	EPA-200.8	16000	50	1	UG/L	06/26/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/26/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/26/2015	RAL
Sodium	EPA-200.8	38000	50	1	UG/L	06/26/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	47	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	95000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	18000	50	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-03
CLIENT SAMPLE ID	MW-16-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 10:12:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Manganese (Dissolved)	EPA-200.8	140	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	18000	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	42000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	250	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	250	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	3.5	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	86.9	06/27/2015	EBS
C25	NWTPH-HCID	66.0	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	77.6	06/27/2015	EBS
DCB	EPA-8082	84.0	07/06/2015	CAS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-04
CLIENT SAMPLE ID	MW-100-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 10:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-04
CLIENT SAMPLE ID	MW-100-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 10:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-04
CLIENT SAMPLE ID	MW-100-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 10:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	UG/L	07/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	UG/L	07/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-04
CLIENT SAMPLE ID	MW-100-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 10:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	UG/L	07/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-04
CLIENT SAMPLE ID	MW-100-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 10:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/07/2015	CAS
Total Dissolved Solids	SM2540C	180	5.0	1	MG/L	06/25/2015	DNT
Chloride	EPA-300.0	9.7	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	3.2	0.34	10	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	17	2.6	10	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	0.76 B	0.45	1	UG/L	06/26/2015	RAL
Barium	EPA-200.8	7.3	1.0	1	UG/L	06/26/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/26/2015	RAL
Calcium	EPA-200.8	25000 B	100	1	UG/L	06/26/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/26/2015	RAL
Iron	EPA-200.8	100	50	1	UG/L	06/26/2015	RAL
Lead	EPA-200.8	0.35 B	0.28	1	UG/L	06/26/2015	RAL
Magnesium	EPA-200.8	7400	50	1	UG/L	06/26/2015	RAL
Manganese	EPA-200.8	190	2.0	1	UG/L	06/26/2015	RAL
Potassium	EPA-200.8	3200	50	1	UG/L	06/26/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/26/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/26/2015	RAL
Sodium	EPA-200.8	9100	50	1	UG/L	06/26/2015	RAL
Arsenic (Dissolved)	EPA-200.8	1.2	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	5.7	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	27000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	8300	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	46	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	3400	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-04
CLIENT SAMPLE ID	MW-100-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 10:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	10000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	98	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	98	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.3	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	96.4	06/27/2015	EBS
C25	NWTPH-HCID	73.6	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	73.3	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	98.6	06/26/2015	CCN
Toluene-d8	EPA-8260	103	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.0	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	98.7	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	88.1	07/06/2015	GAP
2-Fluorophenol	EPA-8270	84.0	07/08/2015	GAP
Phenol-d5	EPA-8270	52.8	07/08/2015	GAP
Nitrobenzene-d5	EPA-8270	83.4	07/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	132 GS1	07/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	94.1	07/08/2015	GAP
Terphenyl-d14	EPA-8270	96.3	07/08/2015	GAP
DCB	EPA-8082	84.0	07/06/2015	CAS
TCMX	EPA-8081	63.0	07/07/2015	CAS
DCB	EPA-8081	85.0	07/07/2015	CAS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 GS1 - Surrogate outside of control limits due to matrix effect.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-05
CLIENT SAMPLE ID	MW-17-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 11:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-05
CLIENT SAMPLE ID	MW-17-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 11:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0091	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-05
CLIENT SAMPLE ID	MW-17-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 11:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.88	1	UG/L	07/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.84	1	UG/L	07/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-05
CLIENT SAMPLE ID	MW-17-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 11:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	2.1	2.0	1	UG/L	07/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.016	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-05
CLIENT SAMPLE ID	MW-17-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 11:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/07/2015	CAS
Total Dissolved Solids	SM2540C	270	5.0	1	MG/L	06/25/2015	DNT
Chloride	EPA-300.0	18	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	U	0.036	1	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	U	0.70	1	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	2.1 B	0.45	1	UG/L	06/26/2015	RAL
Barium	EPA-200.8	65	1.0	1	UG/L	06/26/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/26/2015	RAL
Calcium	EPA-200.8	41000 B	100	1	UG/L	06/26/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/26/2015	RAL
Iron	EPA-200.8	21000	50	1	UG/L	06/26/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/26/2015	RAL
Magnesium	EPA-200.8	14000	50	1	UG/L	06/26/2015	RAL
Manganese	EPA-200.8	2000	2.0	1	UG/L	06/26/2015	RAL
Potassium	EPA-200.8	8600	50	1	UG/L	06/26/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/26/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/26/2015	RAL
Sodium	EPA-200.8	21000	50	1	UG/L	06/26/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.0	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	68	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	44000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	22000	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	16000	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	2200	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	9400	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-05
CLIENT SAMPLE ID	MW-17-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 11:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	24000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	240	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	240	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	2.8	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.1	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	105	06/27/2015	EBS
C25	NWTPH-HCID	82.1	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	71.6	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	98.2	06/26/2015	CCN
Toluene-d8	EPA-8260	102	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.0	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	96.3	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	84.9	07/06/2015	GAP
2-Fluorophenol	EPA-8270	85.8	07/08/2015	GAP
Phenol-d5	EPA-8270	54.4	07/08/2015	GAP
Nitrobenzene-d5	EPA-8270	79.9	07/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	132 GS1	07/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	94.2	07/08/2015	GAP
Terphenyl-d14	EPA-8270	94.4	07/08/2015	GAP
DCB	EPA-8082	99.0	07/06/2015	CAS
TCMX	EPA-8081	64.0	07/07/2015	CAS
DCB	EPA-8081	80.0	07/07/2015	CAS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 GS1 - Surrogate outside of control limits due to matrix effect.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-06
CLIENT SAMPLE ID	TP-MW-1-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 11:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	130	1	UG/L	06/29/2015	EBS
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	U	130	1	UG/L	06/29/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	250	1	UG/L	06/29/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	U	250	1	UG/L	06/29/2015	EBS
Total Dissolved Solids	SM2540C	150	5.0	1	MG/L	06/27/2015	DNT
Chloride	EPA-300.0	9.0	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	2.6	0.34	10	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	12	2.6	10	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	0.63 B	0.45	1	UG/L	06/26/2015	RAL
Barium	EPA-200.8	9.6	1.0	1	UG/L	06/26/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/26/2015	RAL
Calcium	EPA-200.8	22000 B	100	1	UG/L	06/26/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/26/2015	RAL
Iron	EPA-200.8	U	50	1	UG/L	06/26/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/26/2015	RAL
Magnesium	EPA-200.8	7600	50	1	UG/L	06/26/2015	RAL
Manganese	EPA-200.8	8.1	2.0	1	UG/L	06/26/2015	RAL
Potassium	EPA-200.8	3000	50	1	UG/L	06/26/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/26/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/26/2015	RAL
Sodium	EPA-200.8	11000	50	1	UG/L	06/26/2015	RAL
Arsenic (Dissolved)	EPA-200.8	0.49	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	10	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	25000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	8700	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	2.3	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	3300	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	13000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	100	15	1	MG/L	07/02/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-06
CLIENT SAMPLE ID	TP-MW-1-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 11:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bicarbonate as CaCO3	SM2320B	100	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.2	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	88.5	06/29/2015	EBS
C25	NWTPH-DX w/ SGA	99.5	06/29/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-07
CLIENT SAMPLE ID	MW-6-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 12:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Total Dissolved Solids	SM2540C	130	5.0	1	MG/L	06/27/2015	DNT
Chloride	EPA-300.0	9.0	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	U	0.050	1	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	1.7 L	0.26	1	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	1.5 B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	29	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	22000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	8900	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	8100	50	1	UG/L	06/29/2015	RAL
Manganese	EPA-200.8	1200	2.0	1	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	7200	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	10000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	1.1	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	29	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	22000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	8700	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	8000	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	1200	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	7100	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	10000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	110	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	110	15	1	MG/L	07/02/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-07
CLIENT SAMPLE ID	MW-6-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 12:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	0.36	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.3	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	87.1	06/27/2015	EBS
C25	NWTPH-HCID	68.2	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	77.3	06/27/2015	EBS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 L - Analyte was positively identified. Value may be less than the reported estimate.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-08
CLIENT SAMPLE ID	FPP-MW-3-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-08
CLIENT SAMPLE ID	FPP-MW-3-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-08
CLIENT SAMPLE ID	FPP-MW-3-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0093	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	UG/L	07/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	UG/L	07/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-08
CLIENT SAMPLE ID	FPP-MW-3-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 1:00:00 PM
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	UG/L	07/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.011	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-08
CLIENT SAMPLE ID:	FPP-MW-3-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/07/2015	CAS
Total Dissolved Solids	SM2540C	160	5.0	1	MG/L	06/27/2015	DNT
Chloride	EPA-300.0	11	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	U	0.15	1	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	4.7	2.6	10	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	1.2 B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	23	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	27000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	9200	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	11000	50	1	UG/L	06/29/2015	RAL
Manganese	EPA-200.8	480	2.0	1	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	3600	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	18000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	1.3	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	24	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	26000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	9100	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	11000	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	500	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	3600	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-08
CLIENT SAMPLE ID	FPP-MW-3-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	19000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	150	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	150	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	0.32	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	2.1	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	88.9	06/27/2015	EBS
C25	NWTPH-HCID	69.9	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	73.8	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	99.0	06/26/2015	CCN
Toluene-d8	EPA-8260	101	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.5	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	101	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	86.6	07/06/2015	GAP
2-Fluorophenol	EPA-8270	82.1	07/08/2015	GAP
Phenol-d5	EPA-8270	52.5	07/08/2015	GAP
Nitrobenzene-d5	EPA-8270	81.3	07/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	131 GS1	07/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	91.0	07/08/2015	GAP
Terphenyl-d14	EPA-8270	91.5	07/08/2015	GAP
DCB	EPA-8082	102	07/06/2015	CAS
TCMX	EPA-8081	66.0	07/07/2015	CAS
DCB	EPA-8081	82.0	07/07/2015	CAS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 GS1 - Surrogate outside of control limits due to matrix effect.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-09
CLIENT SAMPLE ID	FPP-MW-2-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	450	130	1	UG/L	06/29/2015	EBS
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	140	130	1	UG/L	06/29/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	250	250	1	UG/L	06/29/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	U	250	1	UG/L	06/29/2015	EBS
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	0.010	0.0090	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Total Dissolved Solids	SM2540C	220	5.0	1	MG/L	06/27/2015	DNT
Chloride	EPA-300.0	14	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	0.19	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	4.3	2.6	10	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	2.5 B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	29	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	33000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	15000	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	12000	50	1	UG/L	06/29/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-09
CLIENT SAMPLE ID	FPP-MW-2-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Manganese	EPA-200.8	1600	2.0	1	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	4400	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	34000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.5	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	27	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	31000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	14000	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	11000	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	1500	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	4200	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	32000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	200	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	200	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	1.0	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	5.8	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	89.6	06/29/2015	EBS
C25	NWTPH-DX w/ SGA	96.2	06/29/2015	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	92.5	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	79.9	07/06/2015	GAP

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.
 Oil range product results biased high due to diesel range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-10
CLIENT SAMPLE ID	MW-11-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-10
CLIENT SAMPLE ID	MW-11-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-10
CLIENT SAMPLE ID	MW-11-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0093	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	UG/L	07/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	UG/L	07/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-10
CLIENT SAMPLE ID	MW-11-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	UG/L	07/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-10
CLIENT SAMPLE ID	MW-11-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	0.014	0.010	1	UG/L	07/07/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/07/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/07/2015	CAS
Total Dissolved Solids	SM2540C	250	5.0	1	MG/L	06/27/2015	DNT
Chloride	EPA-300.0	18	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	U	0.50	1	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	2.8 B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	50	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	37000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	31000	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	13000	50	1	UG/L	06/29/2015	RAL
Manganese	EPA-200.8	1800	2.0	1	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	5400	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	18000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.5	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	51	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	37000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	31000	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	2000	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	5500	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-10
CLIENT SAMPLE ID	MW-11-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	18000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	180	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	180	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	0.91	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	5.2	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	81.2	06/27/2015	EBS
C25	NWTPH-HCID	67.9	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	74.9	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	98.6	06/26/2015	CCN
Toluene-d8	EPA-8260	102	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.5	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	94.4	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	83.6	07/06/2015	GAP
2-Fluorophenol	EPA-8270	86.9	07/08/2015	GAP
Phenol-d5	EPA-8270	54.7	07/08/2015	GAP
Nitrobenzene-d5	EPA-8270	86.3	07/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	143 GS1	07/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	97.6	07/08/2015	GAP
Terphenyl-d14	EPA-8270	98.4	07/08/2015	GAP
DCB	EPA-8082	99.0	07/06/2015	CAS
TCMX	EPA-8081	60.0	07/07/2015	CAS
DCB	EPA-8081	81.0	07/07/2015	CAS

GS1 - Surrogate outside of control limits due to matrix effect.

U - Analyte analyzed for but not detected at level above reporting limit.

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-11
CLIENT SAMPLE ID	MW-104-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 2:41:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-11
CLIENT SAMPLE ID	MW-104-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 2:41:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0091	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-11
CLIENT SAMPLE ID	MW-104-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 2:41:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.88	1	UG/L	07/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.84	1	UG/L	07/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-11
CLIENT SAMPLE ID	MW-104-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 2:41:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	0.042	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-11
CLIENT SAMPLE ID	MW-104-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 2:41:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	160	5.0	1	MG/L	06/27/2015	DNT
Chloride	EPA-300.0	16	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	6.2 B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	52	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	39000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	29000	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	14000	50	1	UG/L	06/29/2015	RAL
Manganese	EPA-200.8	2100	2.0	1	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	6700	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	18000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	5.8	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	51	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	38000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	27000	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	2100	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	6600	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060175-11
CLIENT SAMPLE ID	MW-104-062415	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/24/2015 2:41:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	18000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	200	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	200	15	1	MG/L	07/02/2015	CAS
Ammonia as N	EPA-350.1	1.7	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	5.0	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	99.5	06/27/2015	EBS
C25	NWTPH-HCID	79.2	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	73.5	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	99.4	06/26/2015	CCN
Toluene-d8	EPA-8260	102	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.0	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	95.3	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	82.0	07/06/2015	GAP
2-Fluorophenol	EPA-8270	83.7	07/08/2015	GAP
Phenol-d5	EPA-8270	51.8	07/08/2015	GAP
Nitrobenzene-d5	EPA-8270	81.3	07/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	128 GS1	07/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	93.6	07/08/2015	GAP
Terphenyl-d14	EPA-8270	93.2	07/08/2015	GAP
DCB	EPA-8082	105	07/06/2015	CAS
TCMX	EPA-8081	64.0	07/08/2015	CAS
DCB	EPA-8081	79.0	07/08/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
 B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 GS1 - Surrogate outside of control limits due to matrix effect.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15060175
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY BLANK RESULTS

MB-062615W - Batch 94803 - Water by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062615W - Batch 94804 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	130	1	UG/L	06/28/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	250	1	UG/L	06/28/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062315W - Batch 94635 - Water by EPA-8260 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/23/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/23/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/23/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/23/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062315W - Batch 94635 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/23/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-062315W - Batch 94635 - Water by EPA-8260

1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/23/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/23/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/23/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/23/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/23/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/23/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/23/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/23/2015	CCN
Toluene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/23/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/23/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/23/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/23/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/23/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-062315W - Batch 94635 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	DATE	ANALYSIS BY
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/23/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/23/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN

U - Analyte analyzed for but not detected at level above reporting limit.

MB-063015W - Batch 95020 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.015	1	UG/L	07/01/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0097	1	UG/L	07/01/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	UG/L	07/01/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/01/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0098	1	UG/L	07/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.018	1	UG/L	07/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.019	1	UG/L	07/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0073	1	UG/L	07/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	UG/L	07/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.015	1	UG/L	07/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	UG/L	07/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-063015W - Batch 95023 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	DATE	ANALYSIS BY
Pyridine	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	UG/L	07/06/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-063015W - Batch 95023 - Water by EPA-8270

Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	UG/L	07/06/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Hexachloroethane	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/06/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	UG/L	07/06/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.90	1	UG/L	07/06/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	UG/L	07/06/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/06/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/06/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	UG/L	07/06/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Azobenzene	EPA-8270	U	1.6	1	UG/L	07/06/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-063015W - Batch 95023 - Water by EPA-8270

Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.81	1	UG/L	07/06/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/06/2015 - Batch R258226 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0078	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/08/2015 - Batch R258227 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15060175
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY BLANK RESULTS

MB1-07/08/2015 - Batch R258227 - Water by EPA-8081

Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
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U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-258169 - Batch R258169 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	06/25/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-258237 - Batch R258237 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	06/27/2015	DNT
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	07/01/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-257695 - Batch R257695 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	06/26/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-257691 - Batch R257691 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-257686 - Batch R257686 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-062615W - Batch 94695 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS ANALYSIS	
						DATE	BY
Arsenic	EPA-200.8	0.52	0.45	1	UG/L	06/26/2015	RAL
Barium	EPA-200.8	U	1.0	1	UG/L	06/26/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/26/2015	RAL
Calcium	EPA-200.8	130	100	1	UG/L	06/26/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/26/2015	RAL
Iron	EPA-200.8	U	50	1	UG/L	06/26/2015	RAL
Lead	EPA-200.8	0.29	0.28	1	UG/L	06/26/2015	RAL
Magnesium	EPA-200.8	U	50	1	UG/L	06/26/2015	RAL
Manganese	EPA-200.8	U	2.0	1	UG/L	06/26/2015	RAL
Potassium	EPA-200.8	U	50	1	UG/L	06/26/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/26/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/26/2015	RAL
Sodium	EPA-200.8	U	50	1	UG/L	06/26/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062915W - Batch 94808 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS ANALYSIS	
						DATE	BY
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	U	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	U	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	U	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	U	50	1	UG/L	06/30/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/02/2015 - Batch R258225 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS ANALYSIS	
						DATE	BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	07/02/2015	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	07/02/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15060175
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY BLANK RESULTS

MB1-07/02/2015 - Batch R258225 - Water by SM2320B

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/09/2015 - Batch R258224 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	07/09/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/01/2015 - Batch R258223 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	07/01/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 94804 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24) - BS	NWTPH-DX	85.5			06/28/2015	EBS
TPH-Diesel Range (C12-C24) - BSD	NWTPH-DX	93.9	9		06/28/2015	EBS

ALS Test Batch ID: 94635 - Water by EPA-8260 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Trichloroethene - BS	EPA-8260 SIM	92.1			06/23/2015	CCN
Trichloroethene - BSD	EPA-8260 SIM	92.0	0		06/23/2015	CCN

ALS Test Batch ID: 94635 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	89.0			06/23/2015	CCN
1,1-Dichloroethene - BSD	EPA-8260	86.8	3		06/23/2015	CCN
Benzene - BS	EPA-8260	95.2			06/23/2015	CCN
Benzene - BSD	EPA-8260	95.1	0		06/23/2015	CCN
Toluene - BS	EPA-8260	95.3			06/23/2015	CCN
Toluene - BSD	EPA-8260	96.0	1		06/23/2015	CCN
Chlorobenzene - BS	EPA-8260	98.5			06/23/2015	CCN
Chlorobenzene - BSD	EPA-8260	101	2		06/23/2015	CCN

ALS Test Batch ID: 95023 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	35.6			07/06/2015	GAP
Phenol - BSD	EPA-8270	37.9	6		07/07/2015	GAP
2-Chlorophenol - BS	EPA-8270	90.8			07/06/2015	GAP
2-Chlorophenol - BSD	EPA-8270	94.9	4		07/07/2015	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	98.8			07/06/2015	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	104	5		07/07/2015	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	92.3			07/06/2015	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	96.6	5		07/07/2015	GAP
4-Nitrophenol - BS	EPA-8270	19.5			07/06/2015	GAP
4-Nitrophenol - BSD	EPA-8270	22.6	15		07/07/2015	GAP
2,4-Dinitrotoluene - BS	EPA-8270	71.7			07/06/2015	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	77.1	7		07/07/2015	GAP
Pyrene - BS	EPA-8270	114			07/06/2015	GAP
Pyrene - BSD	EPA-8270	119	5		07/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R258226 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	83.0			07/06/2015	CAS
PCB-1016 - BSD	EPA-8082	84.0	1		07/06/2015	CAS
PCB-1260 - BS	EPA-8082	91.0			07/06/2015	CAS
PCB-1260 - BSD	EPA-8082	91.5	1		07/06/2015	CAS

ALS Test Batch ID: R258227 - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	84.5			07/08/2015	CAS
A-BHC - BSD	EPA-8081	82.0	3		07/08/2015	CAS
G-BHC - BS	EPA-8081	84.0			07/08/2015	CAS
G-BHC - BSD	EPA-8081	81.0	4		07/08/2015	CAS
B-BHC - BS	EPA-8081	86.5			07/08/2015	CAS
B-BHC - BSD	EPA-8081	78.5	10		07/08/2015	CAS
Heptachlor - BS	EPA-8081	78.5			07/08/2015	CAS
Heptachlor - BSD	EPA-8081	74.5	5		07/08/2015	CAS
D-BHC - BS	EPA-8081	85.5			07/08/2015	CAS
D-BHC - BSD	EPA-8081	82.5	4		07/08/2015	CAS
Aldrin - BS	EPA-8081	74.0			07/08/2015	CAS
Aldrin - BSD	EPA-8081	72.5	2		07/08/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	82.0			07/08/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	80.5	2		07/08/2015	CAS
Chlordane - BS	EPA-8081	79.0			07/08/2015	CAS
Chlordane - BSD	EPA-8081	76.0	4		07/08/2015	CAS
Endosulfan I - BS	EPA-8081	62.5			07/08/2015	CAS
Endosulfan I - BSD	EPA-8081	61.0	2		07/08/2015	CAS
4,4'-DDE - BS	EPA-8081	80.5			07/08/2015	CAS
4,4'-DDE - BSD	EPA-8081	75.5	6		07/08/2015	CAS
Dieldrin - BS	EPA-8081	82.5			07/08/2015	CAS
Dieldrin - BSD	EPA-8081	80.5	2		07/08/2015	CAS
Endrin - BS	EPA-8081	86.5			07/08/2015	CAS
Endrin - BSD	EPA-8081	84.0	3		07/08/2015	CAS
4,4'-DDD - BS	EPA-8081	78.5			07/08/2015	CAS
4,4'-DDD - BSD	EPA-8081	75.0	5		07/08/2015	CAS
Endosulfan II - BS	EPA-8081	67.0			07/08/2015	CAS
Endosulfan II - BSD	EPA-8081	65.0	3		07/08/2015	CAS
4,4'-DDT - BS	EPA-8081	77.0			07/08/2015	CAS
4,4'-DDT - BSD	EPA-8081	70.0	10		07/08/2015	CAS
Endrin Aldehyde - BS	EPA-8081	74.5			07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Endrin Aldehyde - BSD	EPA-8081	70.0	6		07/08/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	80.0			07/08/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	77.5	3		07/08/2015	CAS
Methoxychlor - BS	EPA-8081	73.5			07/08/2015	CAS
Methoxychlor - BSD	EPA-8081	68.0	8		07/08/2015	CAS
Hexachlorobenzene - BS	EPA-8081	86.5			07/08/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	85.0	2		07/08/2015	CAS
Toxaphene - BS	EPA-8081	93.4			07/08/2015	CAS
Toxaphene - BSD	EPA-8081	87.3	7		07/08/2015	CAS

ALS Test Batch ID: R258169 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	111			06/25/2015	DNT

ALS Test Batch ID: R258237 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	96.0			06/27/2015	DNT
Total Dissolved Solids - BS	SM2540C	85.6			07/01/2015	DNT

ALS Test Batch ID: R257695 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	96.5			06/26/2015	GAP
Chloride - BSD	EPA-300.0	93.5	3		06/26/2015	GAP
Fluoride - BS	EPA-300.0	106			06/26/2015	GAP
Fluoride - BSD	EPA-300.0	106	0		06/26/2015	GAP
Nitrate as N - BS	EPA-300.0	100			06/26/2015	GAP
Nitrate as N - BSD	EPA-300.0	99.0	1		06/26/2015	GAP
Nitrite as N - BS	EPA-300.0	93.5			06/26/2015	GAP
Nitrite as N - BSD	EPA-300.0	88.5	5		06/26/2015	GAP
Sulfate - BS	EPA-300.0	106			06/26/2015	GAP
Sulfate - BSD	EPA-300.0	100	5		06/26/2015	GAP

ALS Test Batch ID: R257691 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	96.0			06/29/2015	RAL
Mercury - BSD	EPA-7470	93.0	3		06/29/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
ALS Test Batch ID: R257686 - Water by EPA-7470						
SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	99.0			06/29/2015	RAL
Mercury (Dissolved) - BSD	EPA-7470	95.0	4		06/29/2015	RAL

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
ALS Test Batch ID: 94695 - Water by EPA-200.8						
SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	95.1		B	06/26/2015	RAL
Arsenic - BSD	EPA-200.8	94.5	1	B	06/26/2015	RAL
Barium - BS	EPA-200.8	97.3			06/26/2015	RAL
Barium - BSD	EPA-200.8	95.8	2		06/26/2015	RAL
Cadmium - BS	EPA-200.8	97.2			06/26/2015	RAL
Cadmium - BSD	EPA-200.8	96.6	1		06/26/2015	RAL
Calcium - BS	EPA-200.8	95.3		B	06/26/2015	RAL
Calcium - BSD	EPA-200.8	92.1	3	B	06/26/2015	RAL
Chromium - BS	EPA-200.8	92.1			06/26/2015	RAL
Chromium - BSD	EPA-200.8	91.1	1		06/26/2015	RAL
Iron - BS	EPA-200.8	93.6			06/26/2015	RAL
Iron - BSD	EPA-200.8	92.7	1		06/26/2015	RAL
Lead - BS	EPA-200.8	95.7		B	06/26/2015	RAL
Lead - BSD	EPA-200.8	94.1	2	B	06/26/2015	RAL
Magnesium - BS	EPA-200.8	88.8			06/26/2015	RAL
Magnesium - BSD	EPA-200.8	86.0	3		06/26/2015	RAL
Manganese - BS	EPA-200.8	95.1			06/26/2015	RAL
Manganese - BSD	EPA-200.8	93.3	2		06/26/2015	RAL
Potassium - BS	EPA-200.8	92.6			06/26/2015	RAL
Potassium - BSD	EPA-200.8	90.0	3		06/26/2015	RAL
Selenium - BS	EPA-200.8	99.1			06/26/2015	RAL
Selenium - BSD	EPA-200.8	96.6	3		06/26/2015	RAL
Silver - BS	EPA-200.8	96.2			06/26/2015	RAL
Silver - BSD	EPA-200.8	94.8	2		06/26/2015	RAL
Sodium - BS	EPA-200.8	87.8			06/26/2015	RAL
Sodium - BSD	EPA-200.8	85.9	2		06/26/2015	RAL

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 94808 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	102			06/30/2015	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	101	0		06/30/2015	RAL
Barium (Dissolved) - BS	EPA-200.8	100			06/30/2015	RAL
Barium (Dissolved) - BSD	EPA-200.8	99.4	1		06/30/2015	RAL
Cadmium (Dissolved) - BS	EPA-200.8	104			06/30/2015	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	100	3		06/30/2015	RAL
Calcium (Dissolved) - BS	EPA-200.8	99.9			06/30/2015	RAL
Calcium (Dissolved) - BSD	EPA-200.8	97.4	3		06/30/2015	RAL
Chromium (Dissolved) - BS	EPA-200.8	100			06/30/2015	RAL
Chromium (Dissolved) - BSD	EPA-200.8	98.0	3		06/30/2015	RAL
Iron (Dissolved) - BS	EPA-200.8	101			06/30/2015	RAL
Iron (Dissolved) - BSD	EPA-200.8	98.0	3		06/30/2015	RAL
Lead (Dissolved) - BS	EPA-200.8	102			06/30/2015	RAL
Lead (Dissolved) - BSD	EPA-200.8	98.9	3		06/30/2015	RAL
Magnesium (Dissolved) - BS	EPA-200.8	99.8			06/30/2015	RAL
Magnesium (Dissolved) - BSD	EPA-200.8	96.2	4		06/30/2015	RAL
Manganese (Dissolved) - BS	EPA-200.8	102			06/30/2015	RAL
Manganese (Dissolved) - BSD	EPA-200.8	99.3	3		06/30/2015	RAL
Potassium (Dissolved) - BS	EPA-200.8	99.2			06/30/2015	RAL
Potassium (Dissolved) - BSD	EPA-200.8	95.9	3		06/30/2015	RAL
Selenium (Dissolved) - BS	EPA-200.8	102			06/30/2015	RAL
Selenium (Dissolved) - BSD	EPA-200.8	102	0		06/30/2015	RAL
Silver (Dissolved) - BS	EPA-200.8	103			06/30/2015	RAL
Silver (Dissolved) - BSD	EPA-200.8	98.4	4		06/30/2015	RAL
Sodium (Dissolved) - BS	EPA-200.8	98.4			06/30/2015	RAL
Sodium (Dissolved) - BSD	EPA-200.8	95.3	3		06/30/2015	RAL

ALS Test Batch ID: R258225 - Water by SM2320B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total - BS	SM2320B	105			07/02/2015	CAS

ALS Test Batch ID: R258224 - Water by EPA-350.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N 5X Dilution - BS	EPA-350.1	98.0			07/09/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/21/2015
130 - 2nd Ave. S. ALS SDG#: EV15060175
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R258223 - Water by SM5310C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - BS	SM5310C	94.9			07/01/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060175
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

MATRIX SPIKE RESULTS

ALS Test Batch ID: R258223 - Water

Parent Sample: MW-9A-062415

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - MS	SM5310C	1.3	25.0	27.0		103		07/01/2015	CAS

ALS Test Batch ID: R258224 - Water

Parent Sample: MW-9A-062415

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N - MS	EPA-350.1	0	2.00	1.97		98.5		07/09/2015	CAS
Ammonia as N - MSD	EPA-350.1	0	2.00	1.95	1	97.5		07/09/2015	CAS

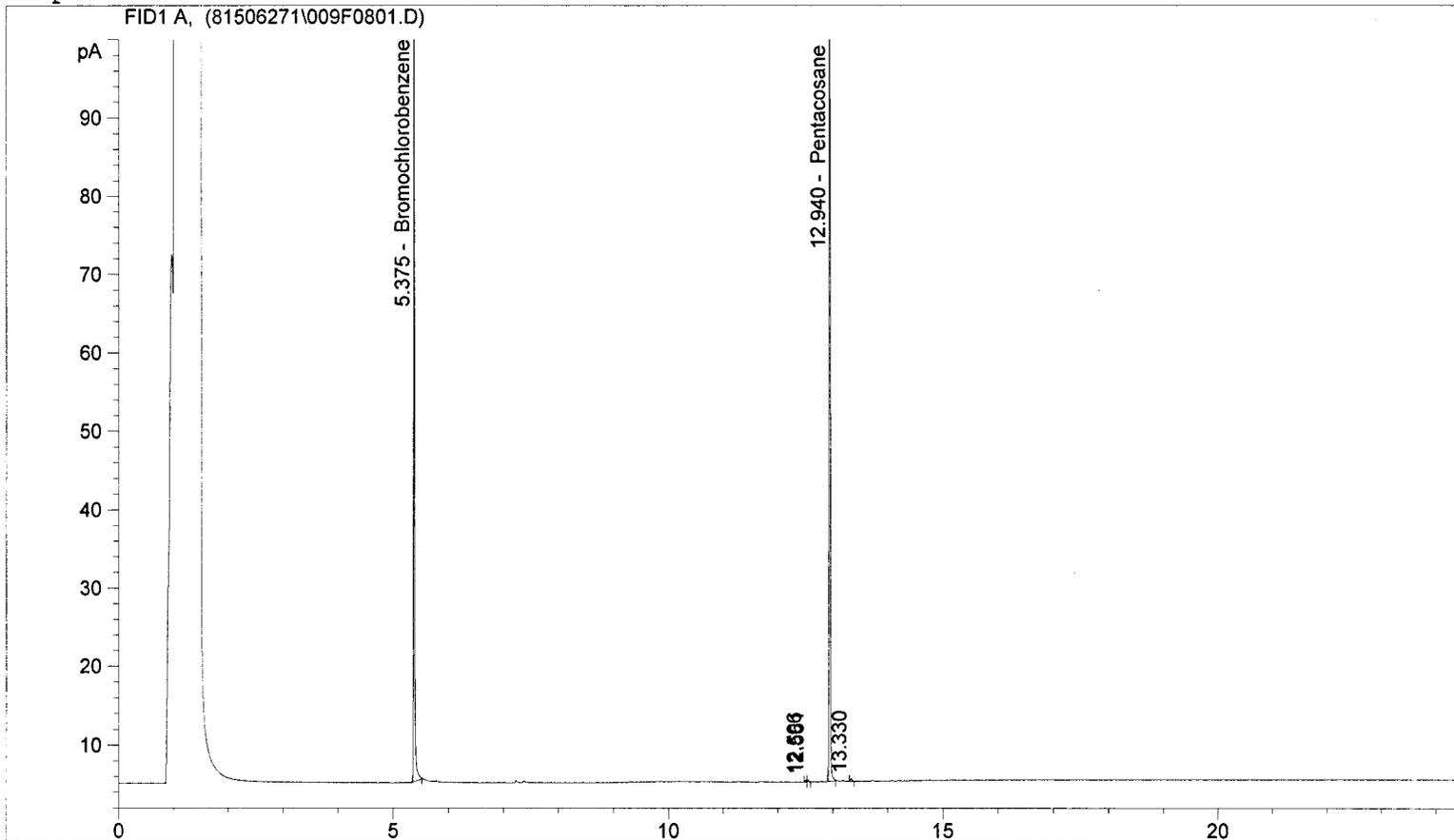
APPROVED BY



Laboratory Director

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\009F0801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 6/27/2015 11:49:49 AM 6/27/2015 11:49:49 AM
 Report Creation: 6/29/2015 11:08:59 AM

Sample Name: EV15060175-01 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.375	FID1 A,	Bromochlorobenzene	155.570	26.914
12.940		Pentacosane	166.512	8.453

108%
85%

G < 130 µg/L
 D < 310 µg/L

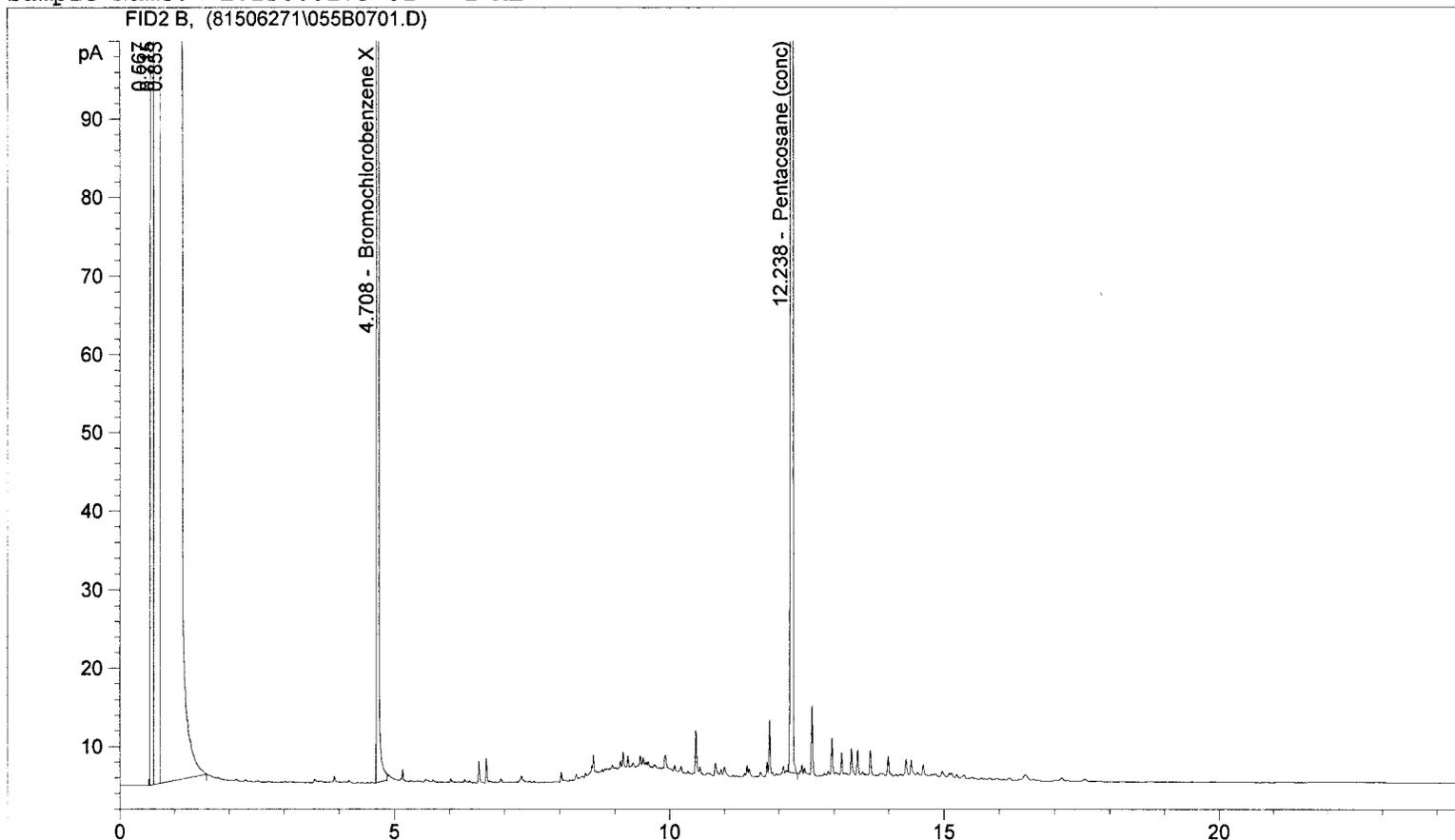
REVIEWED BY MS
 DATE 7/2/15

06.30.15ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\055B0701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 6/27/2015 11:49:49 AM 6/27/2015 11:49:49 AM
 Report Creation: 6/29/2015 11:39:00 AM

Sample Name: EV15060175-01 1 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene X	2648.158	206.186
12.238		Pentacosane (conc)	2837.151	73.637

74%

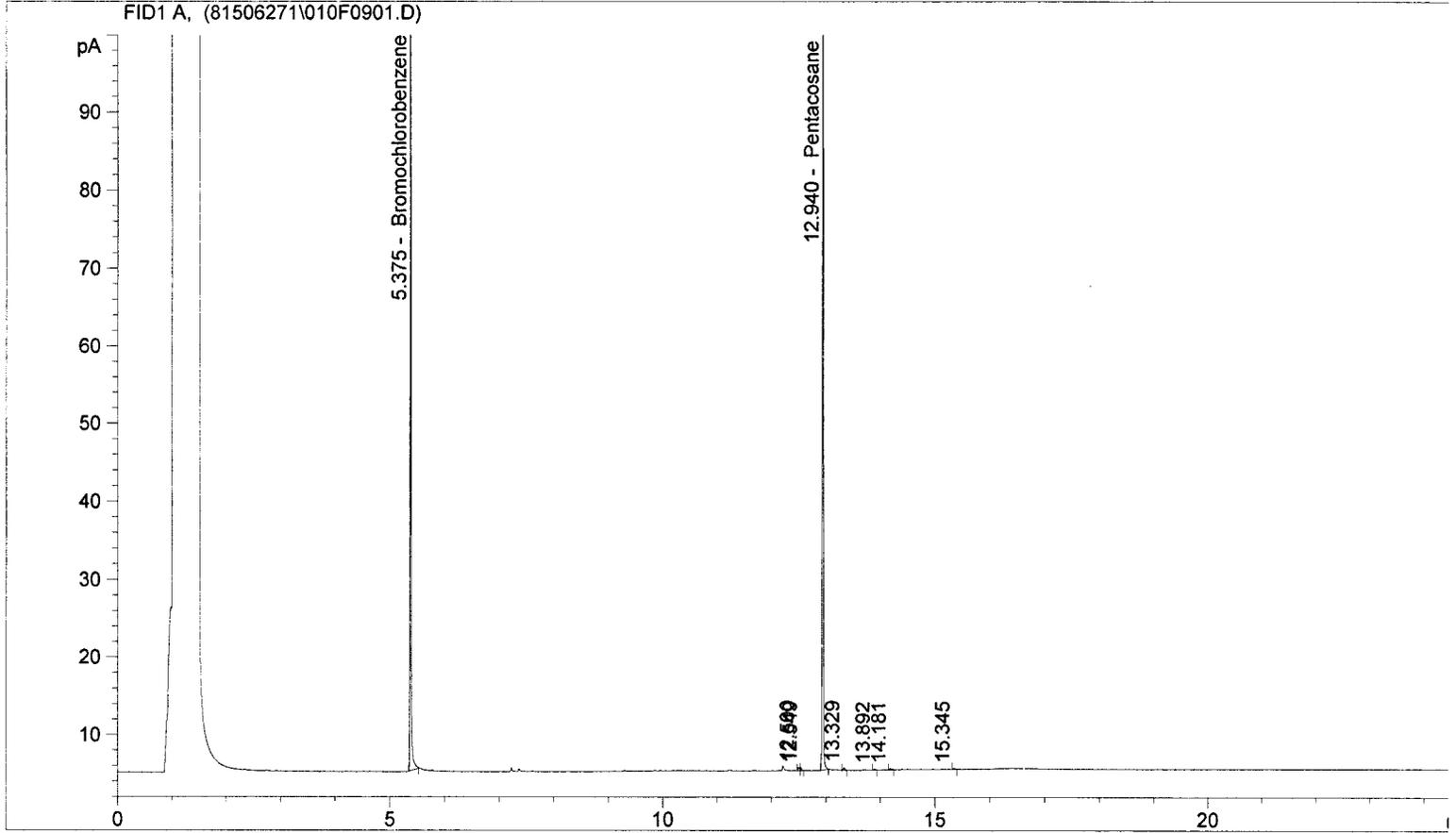
0 < 310 µg/L

RE BY MB
 E 7/2/15

06.30.15 ET

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\010F0901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 6/27/2015 12:25:06 PM 6/27/2015 12:25:06 PM
 Report Creation: 6/29/2015 11:09:54 AM

Sample Name: EV15060175-02 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.375	FID1 A,	Bromochlorobenzene	146.859	25.407
12.940		Pentacosane	159.738	8.109

1021.
811.

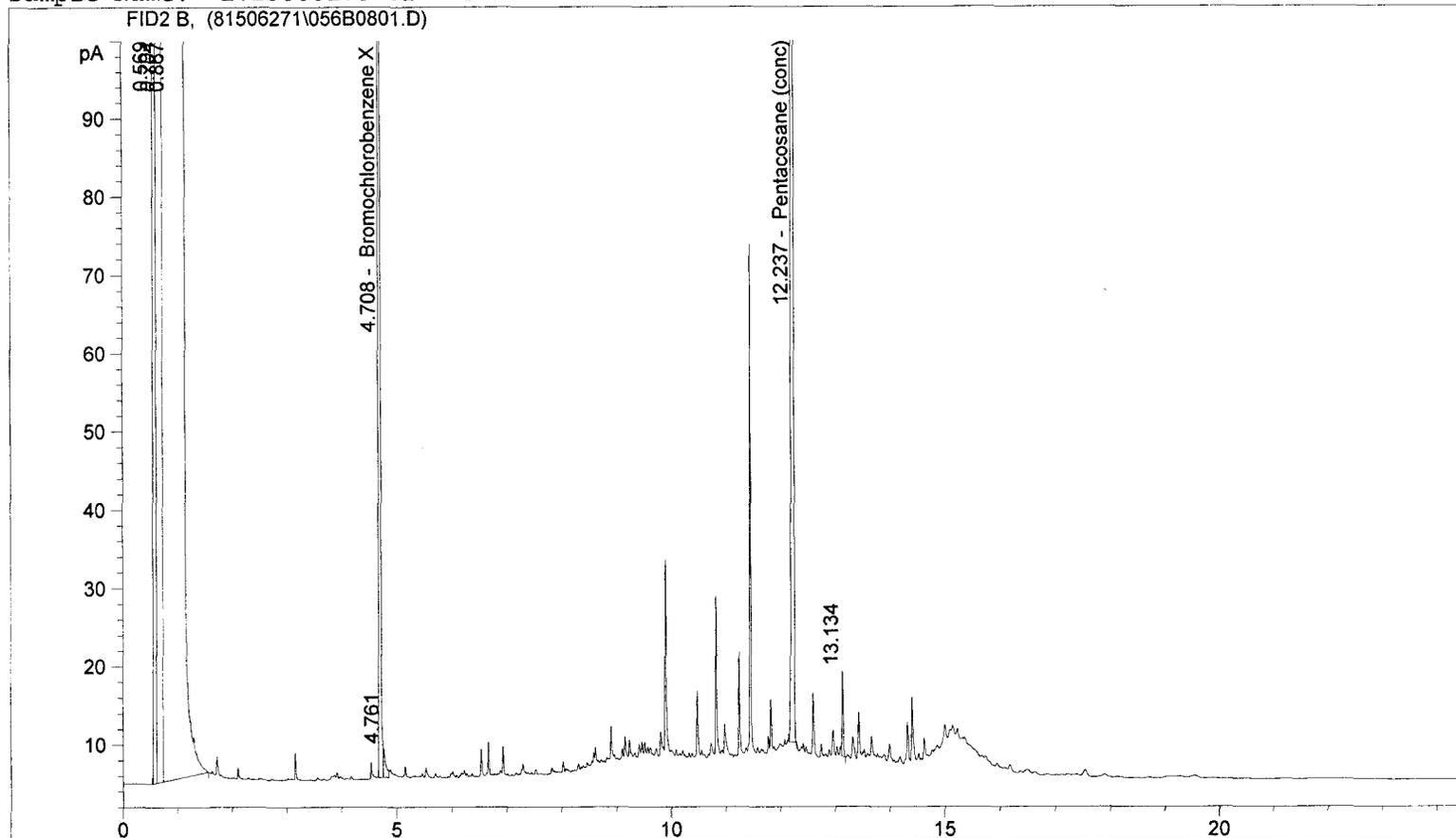
G < 130 µg/L
 D < 310 µg/L

RE BY MS
 E 7/12/15

06-30.1521

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\056B0801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 6/27/2015 12:25:06 PM 6/27/2015 12:25:06 PM
 Report Creation: 6/29/2015 11:39:15 AM

Sample Name: EV15060175-02 1 ML



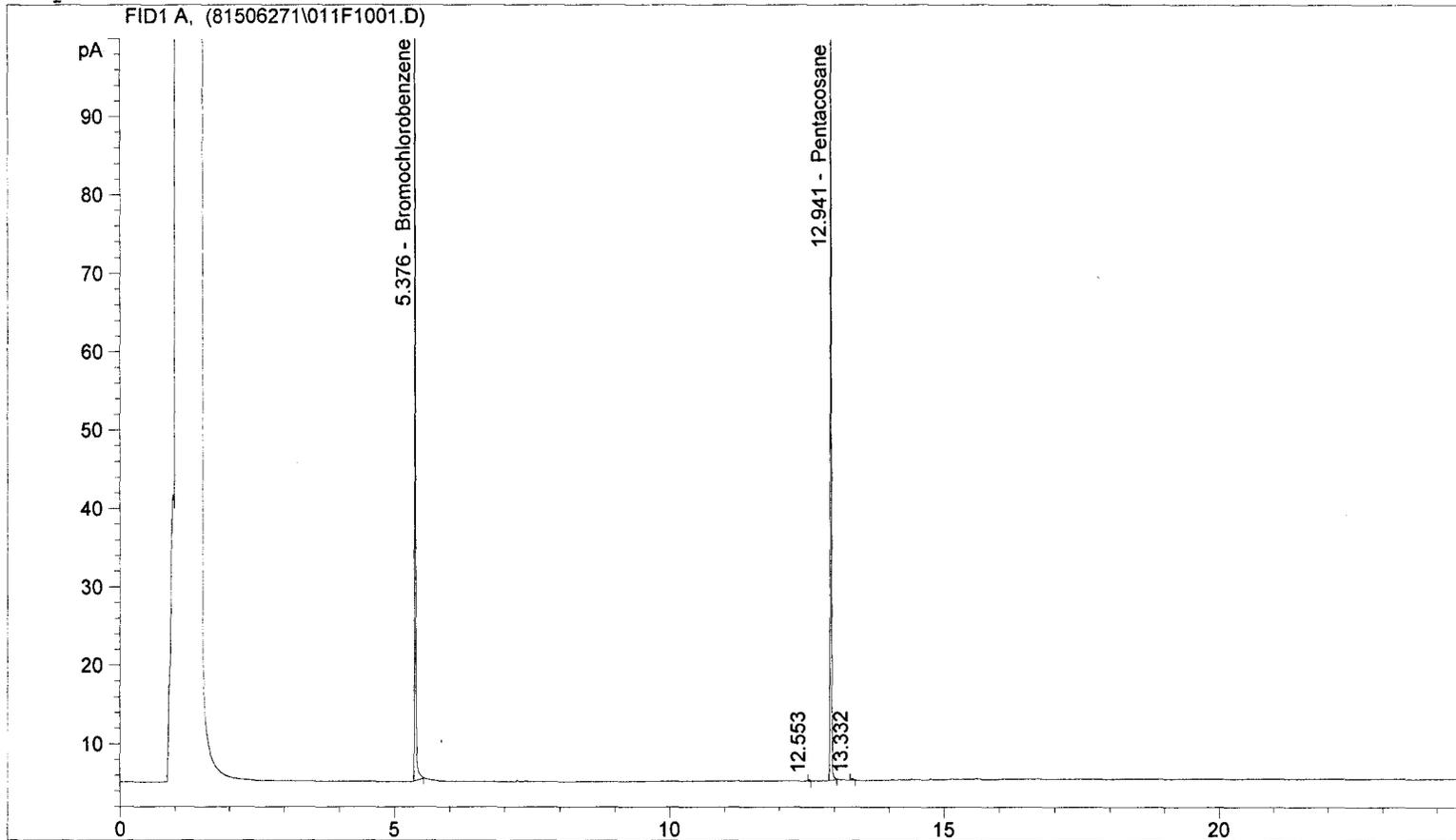
Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene X	2595.988	202.123
12.237		Pentacosane (conc)	2777.422	72.087 <i>72%</i>

D < 310 µ/L

RE BY MB
 E 7/14/15

06.30.15E

Sample Name: EV15060175-03 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.376	FID1 A,	Bromochlorobenzene	125.573	21.725
12.941		Pentacosane	129.933	6.596

87%
66%

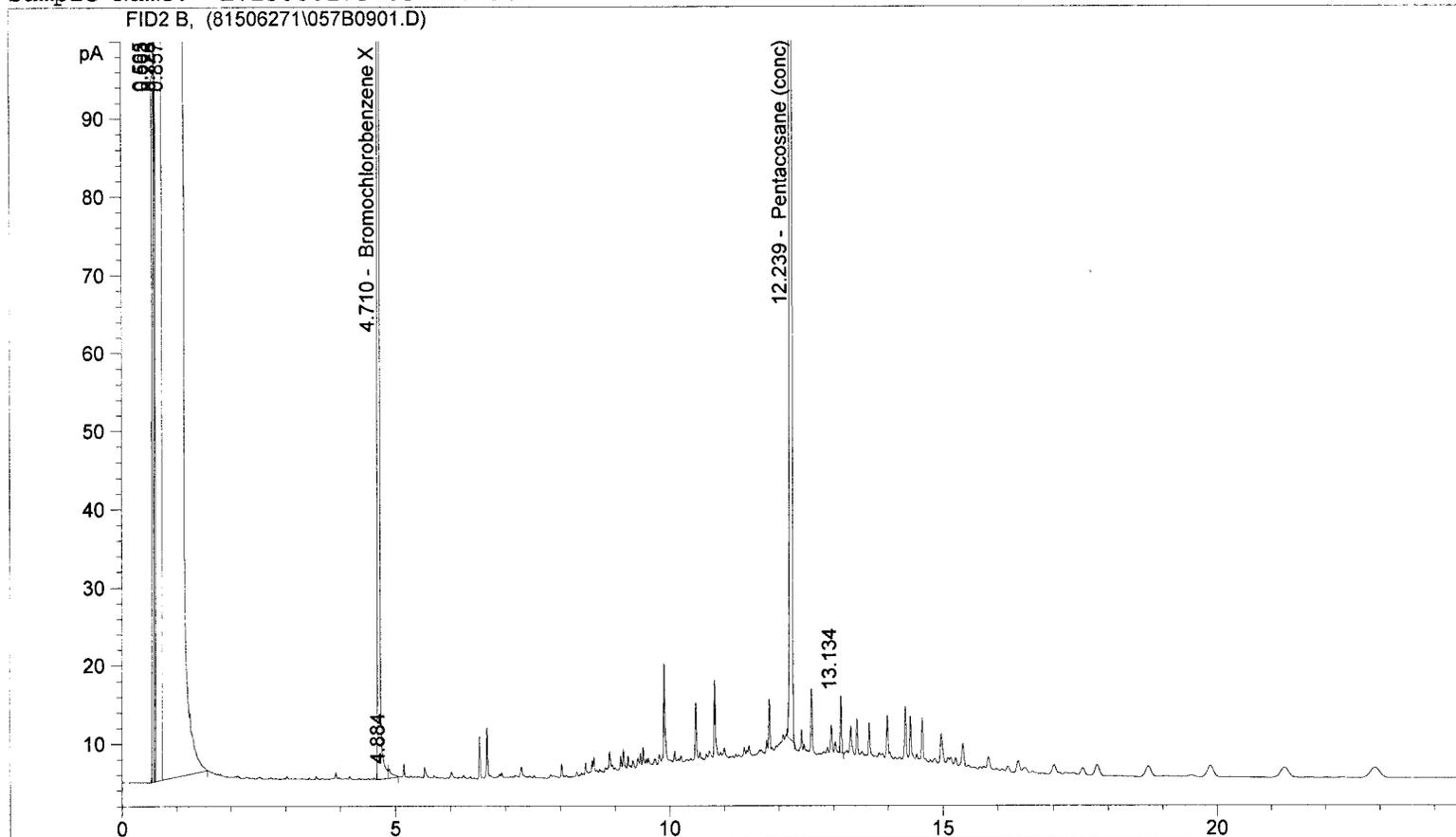
G < 130 ng/L
 D < 310 ng/L

RE BY MB
 E 7/12/15

06-29-15[E]

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\057B0901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 6/27/2015 1:00:40 PM 6/27/2015 1:00:40 PM
 Report Creation: 6/29/2015 11:39:31 AM

Sample Name: EV15060175-03 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.710	FID2 B,	Bromochlorobenzene X	2977.953	231.863
12.239		Pentacosane (conc)	2987.999	77.552

78%

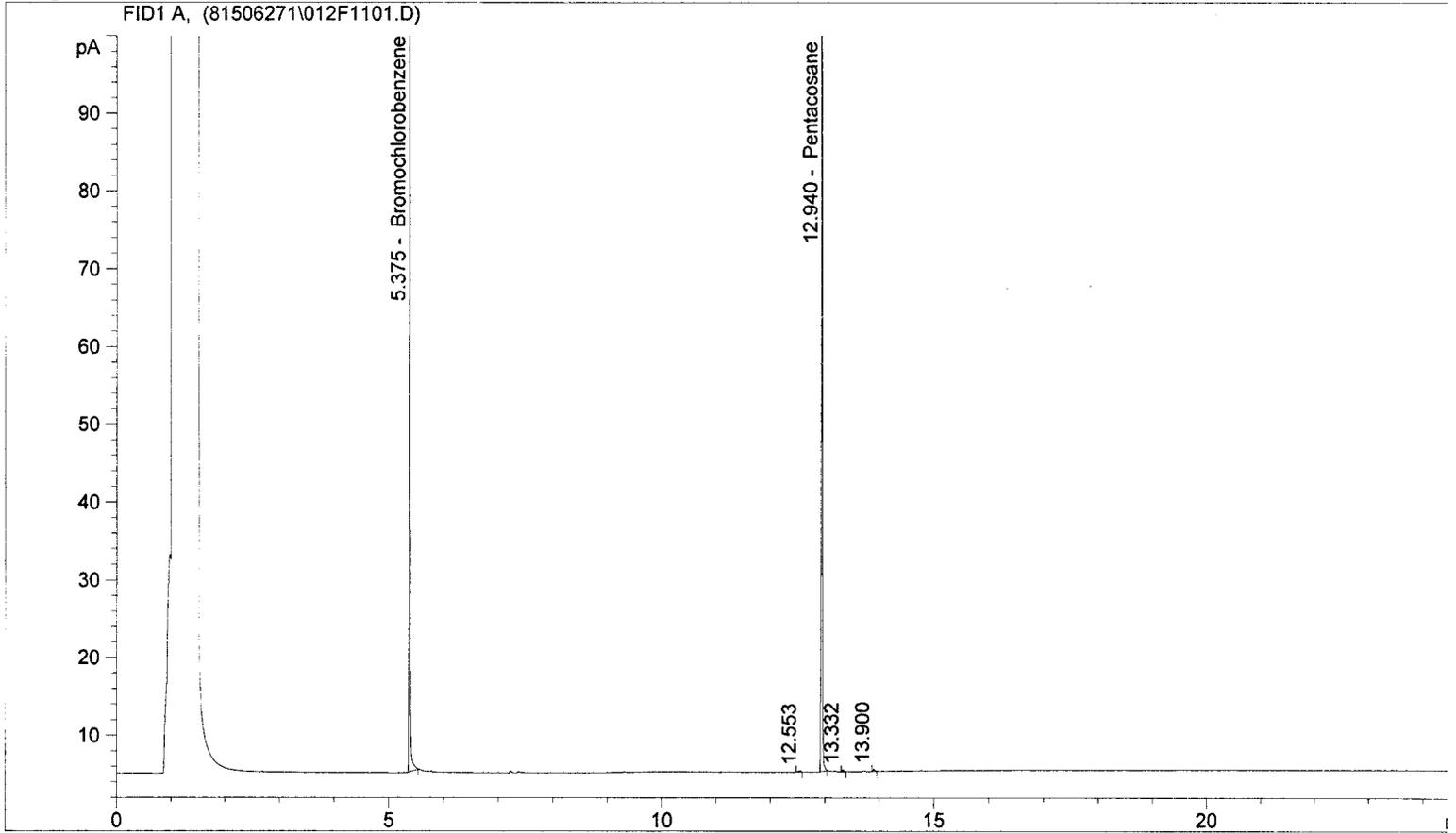
0 < 310 µg/L

RE BY MB/S
 E 7/1/15

BS1.02.90

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\012F1101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 6/27/2015 1:36:00 PM 6/27/2015 1:36:00 PM
 Report Creation: 6/29/2015 11:10:36 AM

Sample Name: EV15060175-04 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.375	FID1 A,	Bromochlorobenzene	139.244	24.090
12.940		Pentacosane	144.915	7.357

96%
74%

G < 130 µg/L

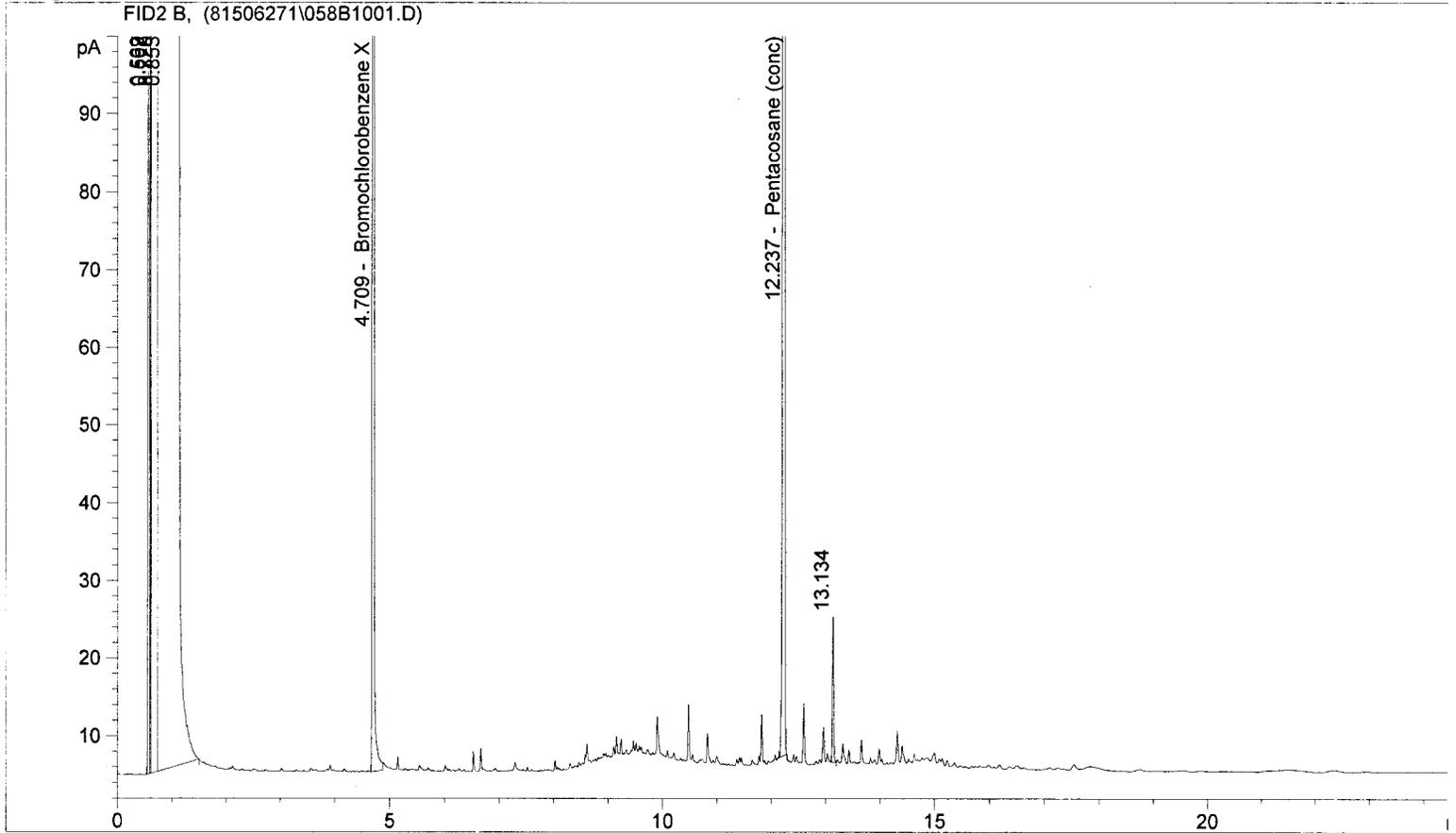
D < 30 µg/L

RE BY MS
E 7/1/15

06.30.15 EBS

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\058B1001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 6/27/2015 1:36:00 PM 6/27/2015 1:36:00 PM
 Report Creation: 6/29/2015 11:39:47 AM

Sample Name: EV15060175-04 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.709	FID2 B,	Bromochlorobenzene X	2727.452	212.359
12.237		Pentacosane (conc)	2823.736	73.289

73/

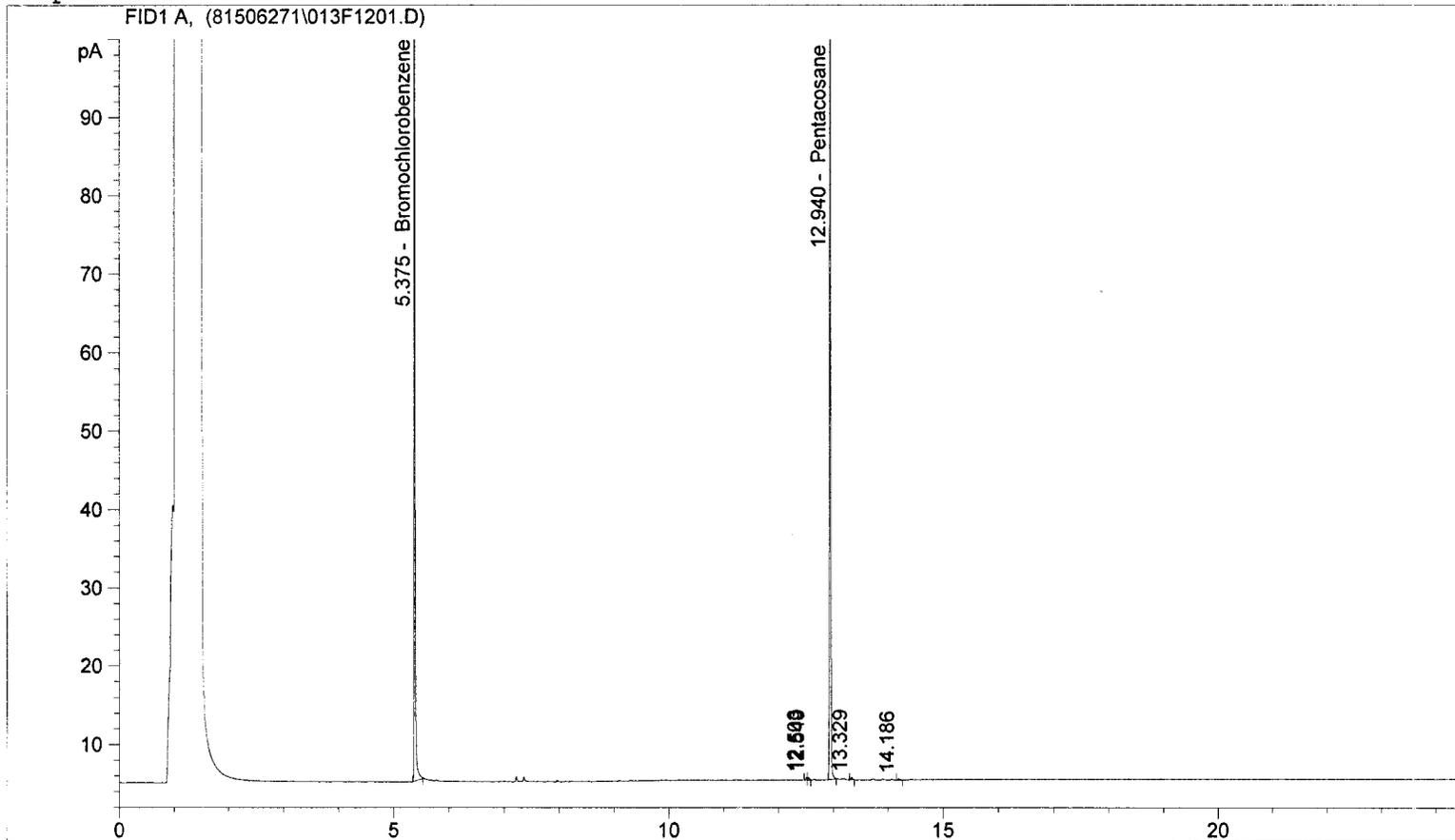
0 < 310 µg/L

RE BY MS
 E 7/12/15

06-30-15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\013F1201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 6/27/2015 2:11:13 PM 6/27/2015 2:11:13 PM
 Report Creation: 6/29/2015 11:10:54 AM

Sample Name: EV15060175-05 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.375	FID1 A,	Bromochlorobenzene	152.028	26.302
12.940		Pentacosane	161.788	8.214

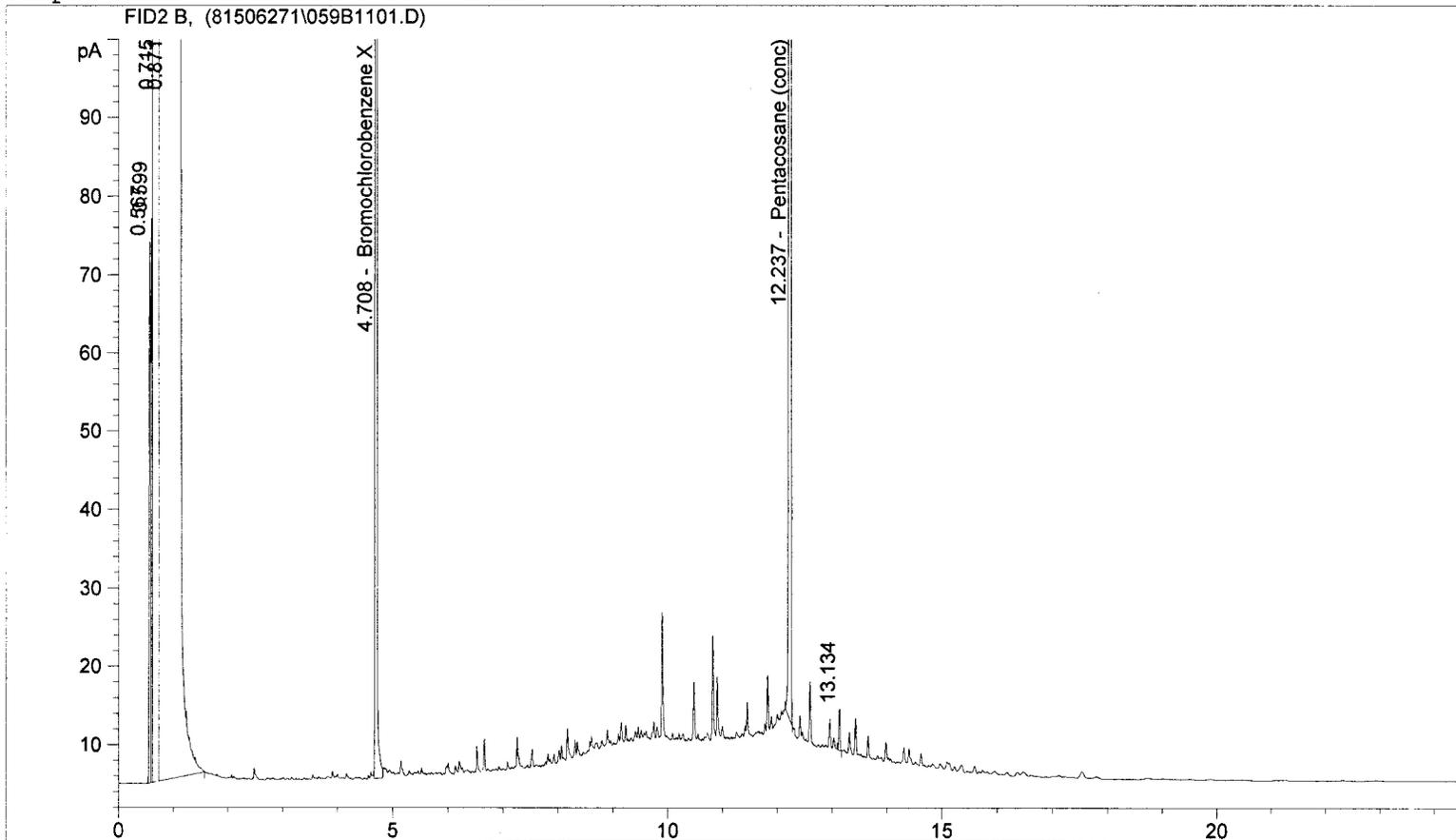
105%
82%

G < 130 µg/L
D < 310 µg/L

RE BY NB
E 7/12/15

06-30-15

Sample Name: EV15060175-05 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene X	2707.551	210.810
12.237		Pentacosane (conc)	2759.787	71.629

72%

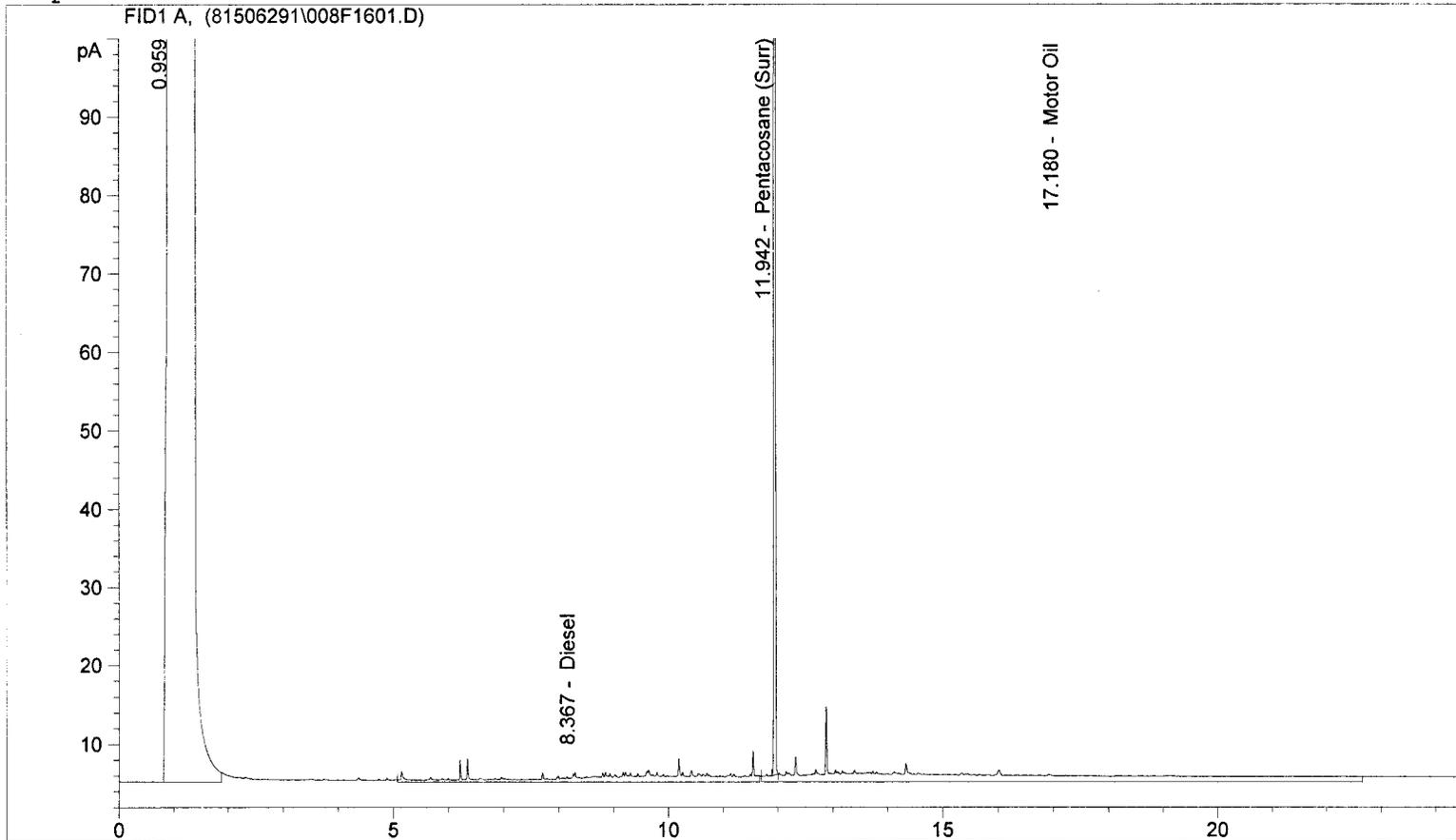
0 < 310 ug/L

RE	BY	13/7/15
	E	

06.30.15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506291\008F1601.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FDMO0914.M
 Injection Date & Time: 6/29/2015 4:22:44 PM 6/29/2015 4:22:44 PM
 Report Creation: 6/29/2015 7:12:56 PM

Sample Name: EV15060175-06 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.367	FID1 A,	Diesel	233.134	20.128
11.942		Pentacosane (Surr)	859.994	35.417
17.180		Motor Oil	549.359	50.590

897.

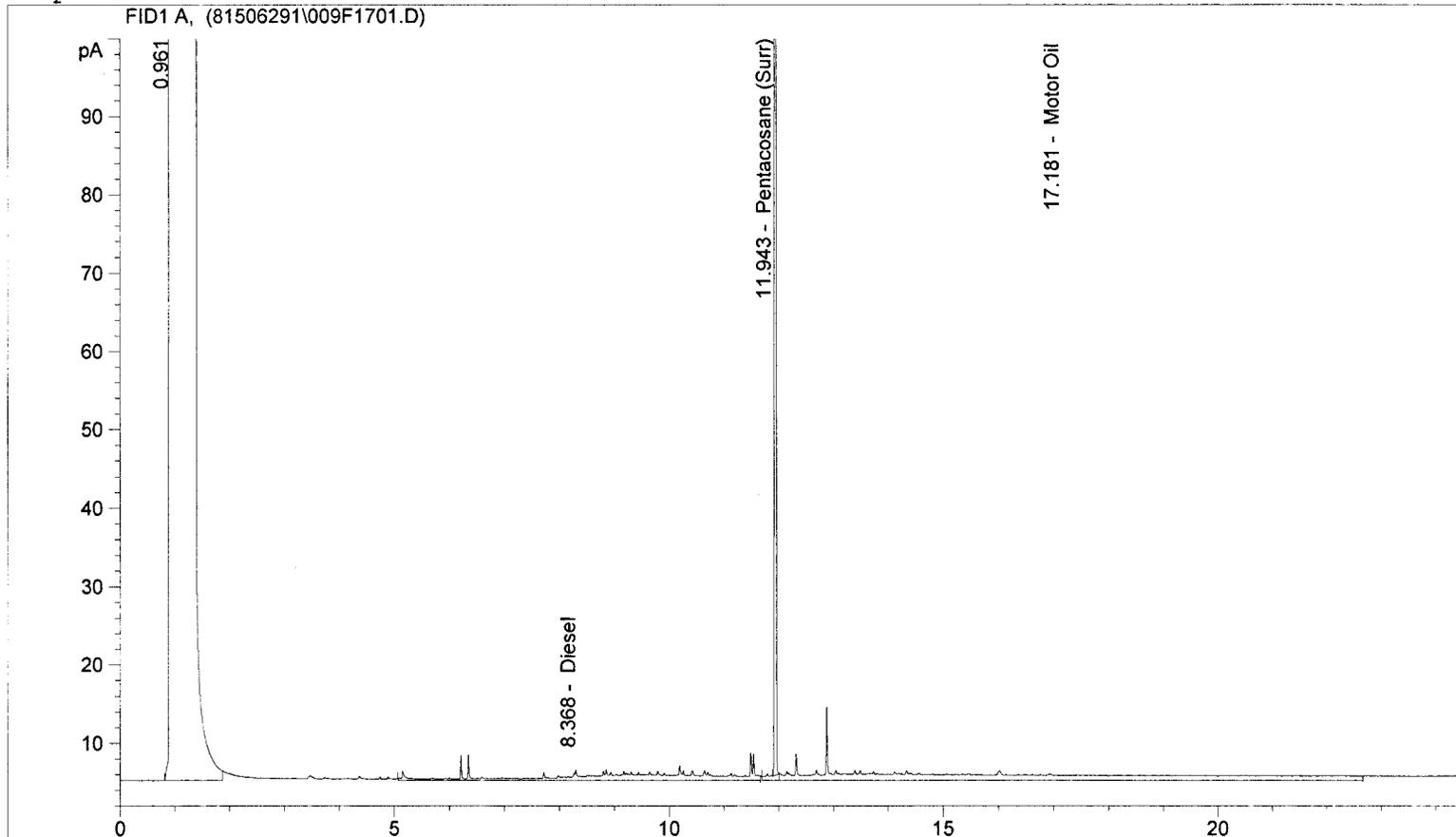
D < 130 ug/L
O < 250 ug/L

RE BY 13
 E 7/14/15

06.30.15EJ

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506291\009F1701.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FDMO0914.M
 Injection Date & Time: 6/29/2015 4:53:27 PM 6/29/2015 4:53:27 PM
 Report Creation: 6/29/2015 7:13:12 PM

Sample Name: EV15060175-06 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	208.037	17.961
11.943		Pentacosane (Surr)	966.766	39.814
17.181		Motor Oil	461.963	42.541

100%

$\Delta < 130 \mu\text{g/L}$

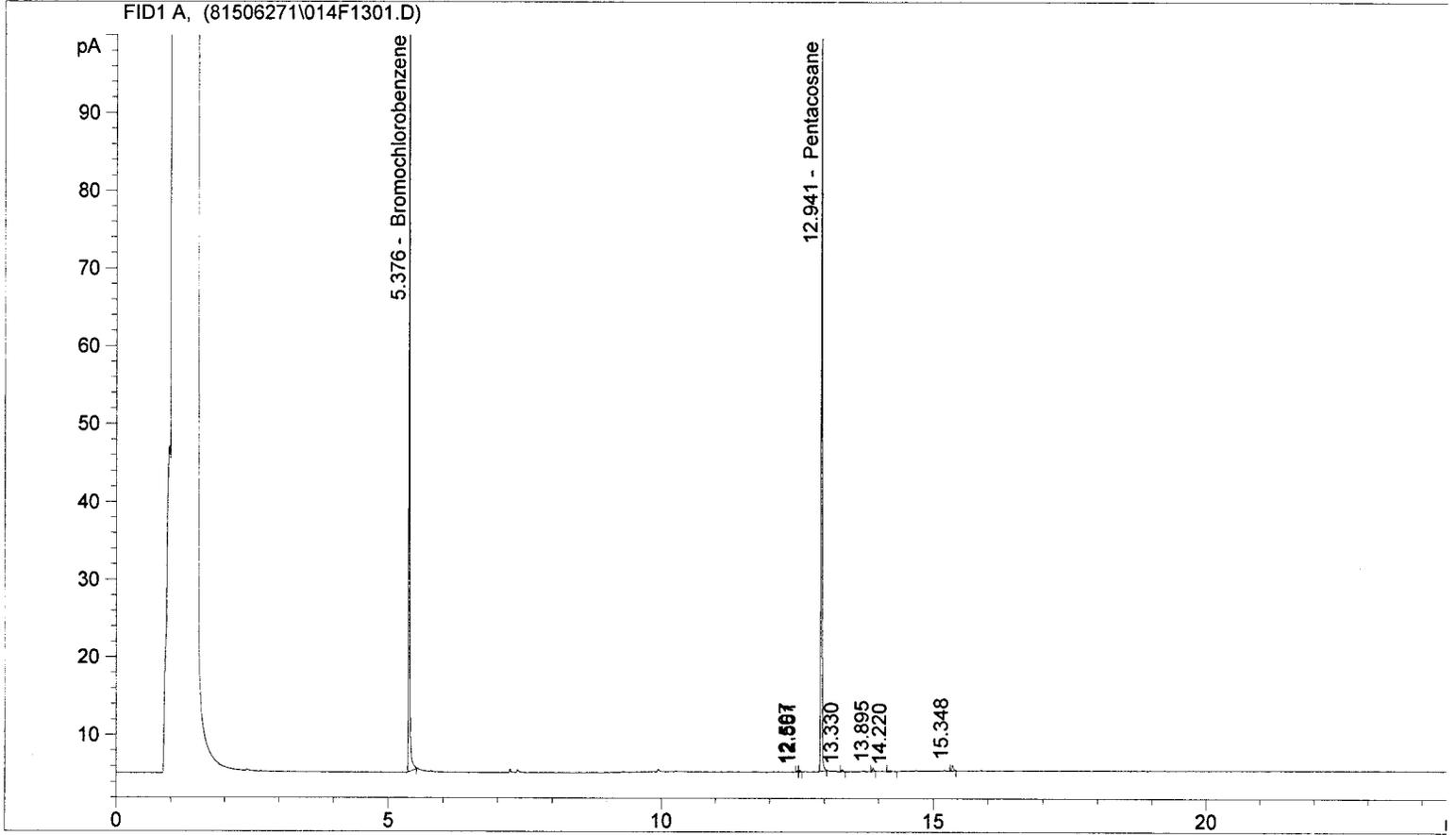
$\text{O} < 250 \mu\text{g/L}$

RE BY 1B
E 7/14/15

06.30.15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\014F1301.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 6/27/2015 2:46:27 PM 6/27/2015 2:46:27 PM
 Report Creation: 6/29/2015 11:11:07 AM

Sample Name: EV15060175-07 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.376	FID1 A,	Bromochlorobenzene	125.828	21.769
12.941		Pentacosane	134.338	6.820

87%
68%

C < 130 ug/L
D < 310 ug/L

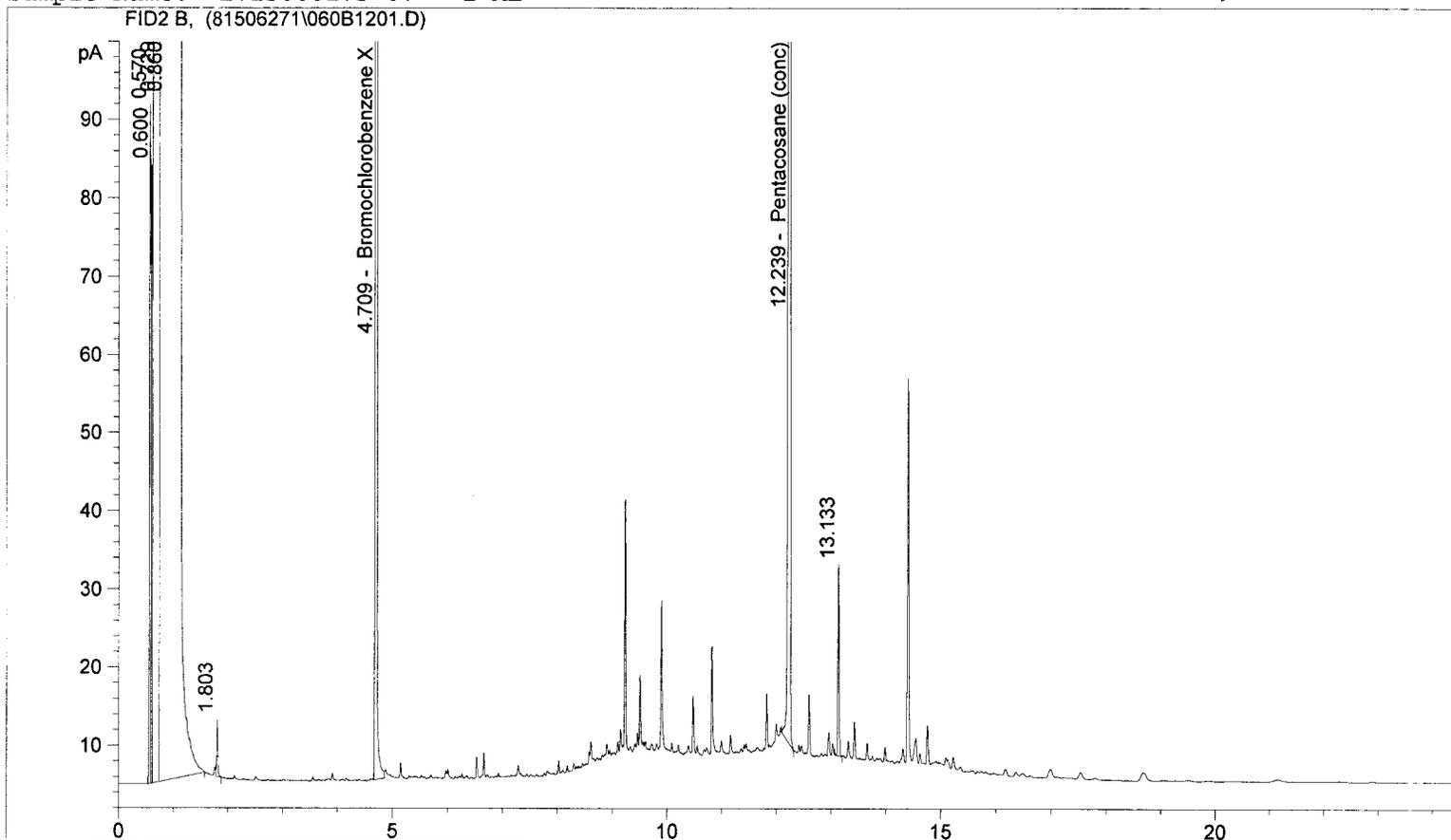
RE BY MS
 E 7/12/15

06.29.15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\060B1201.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 6/27/2015 2:46:27 PM 6/27/2015 2:46:27 PM
 Report Creation: 6/29/2015 11:40:18 AM

Sample Name: EV15060175-07 1 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.709	FID2 B,	Bromochlorobenzene X	2890.336	225.041
12.239		Pentacosane (conc)	2978.665	77.310

77%

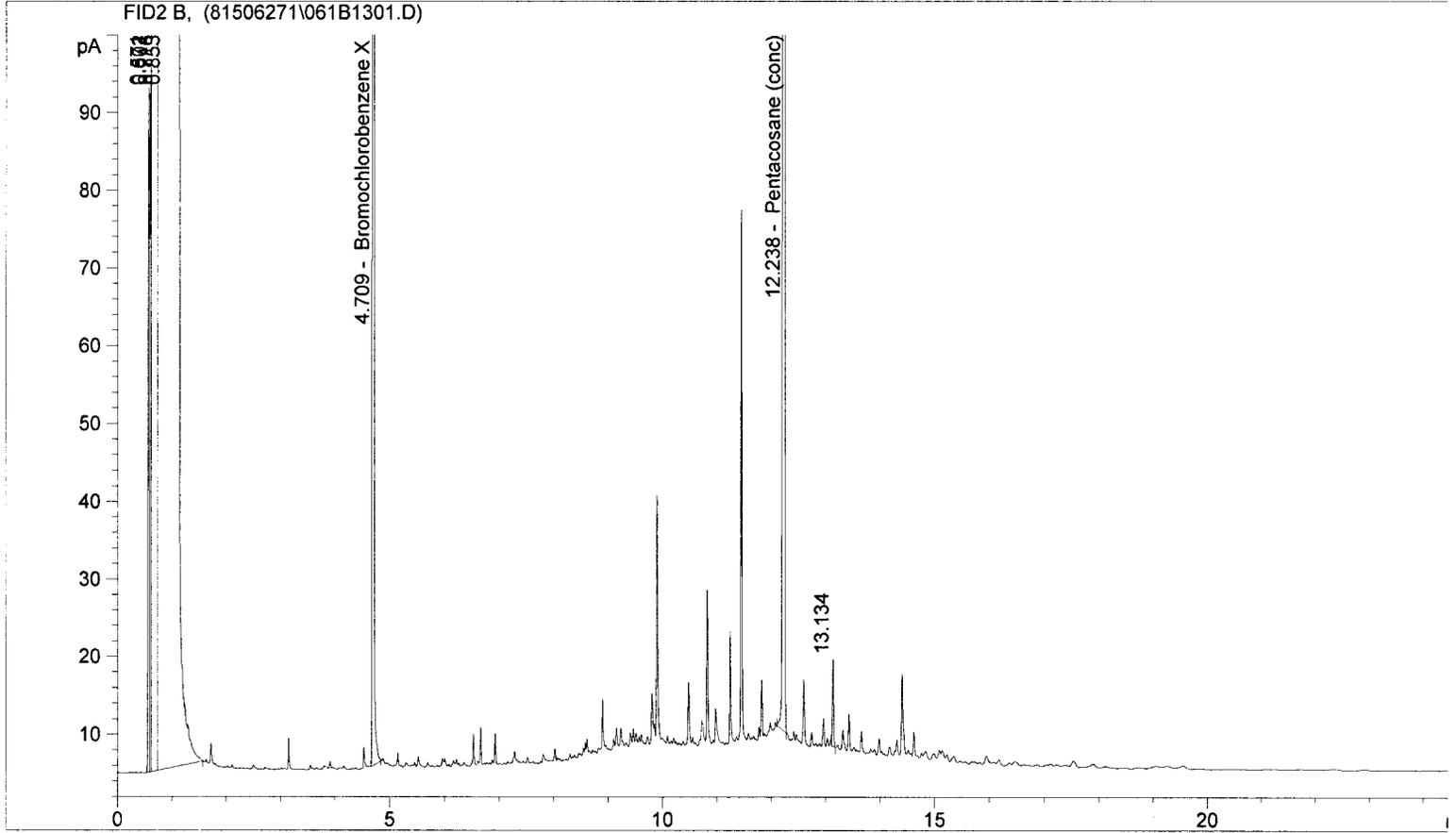
0 < 310 µg/L

RE BY *ES*
 E 7/2/15

06-30-15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\061B1301.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 6/27/2015 3:22:19 PM 6/27/2015 3:22:19 PM
 Report Creation: 6/29/2015 11:40:35 AM

Sample Name: EV15060175-08 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.709	FID2 B,	Bromochlorobenzene X	2714.014	211.313
12.238		Pentacosane (conc)	2843.797	73.810

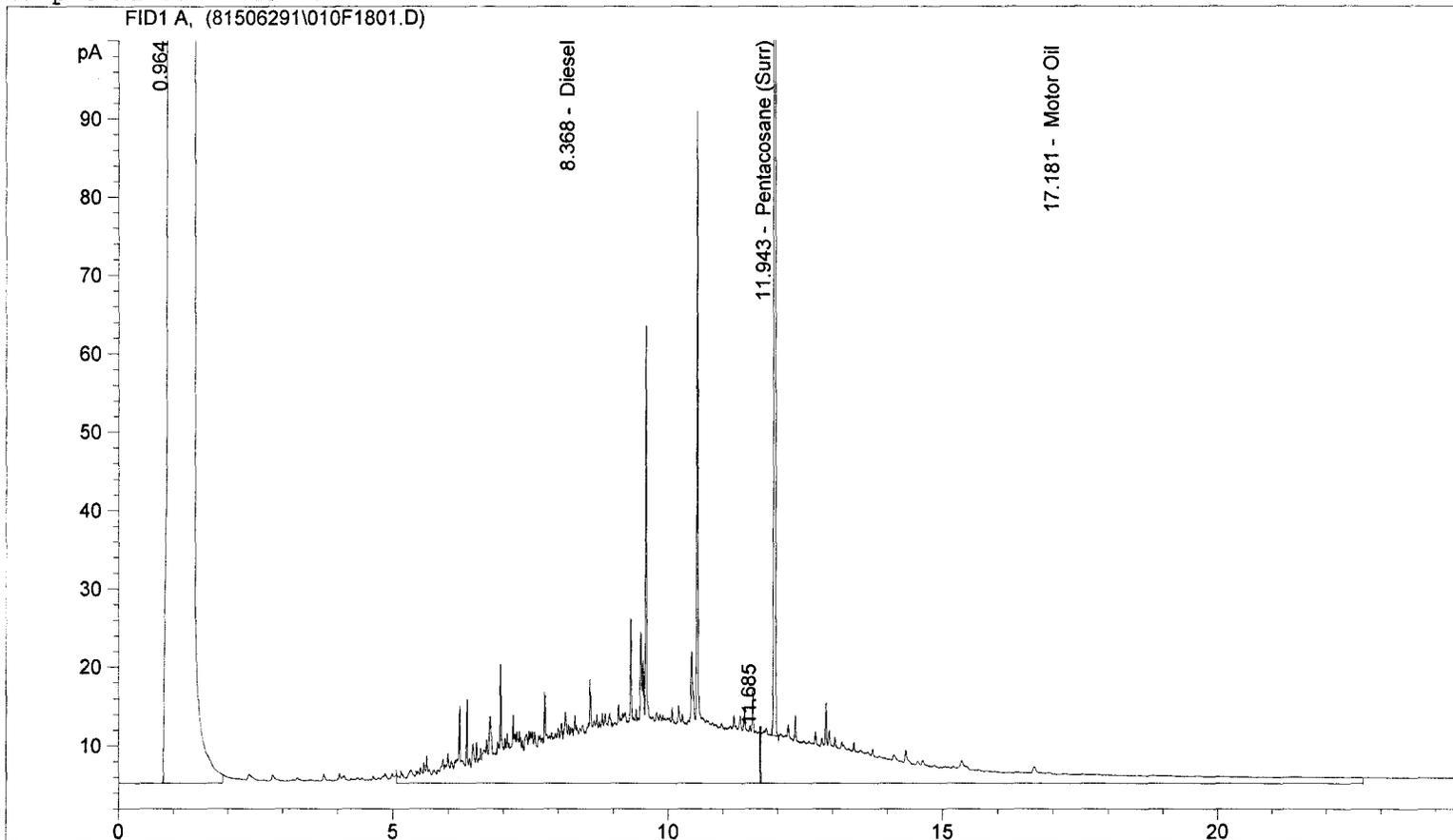
74%

0 < 310 µg/L

RE	BY	MS
E		7/2/15

06.30.15E

Sample Name: EV15060175-09 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	2596.669	224.190
11.943		Pentacosane (Surr)	869.996	35.829
17.181		Motor Oil	1359.272	125.173

90%

$$D = 224.190 \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 450 \mu\text{g/L}$$

Unidentified Diesel Range Product

$$O = 125.173 \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 250 \mu\text{g/L}$$

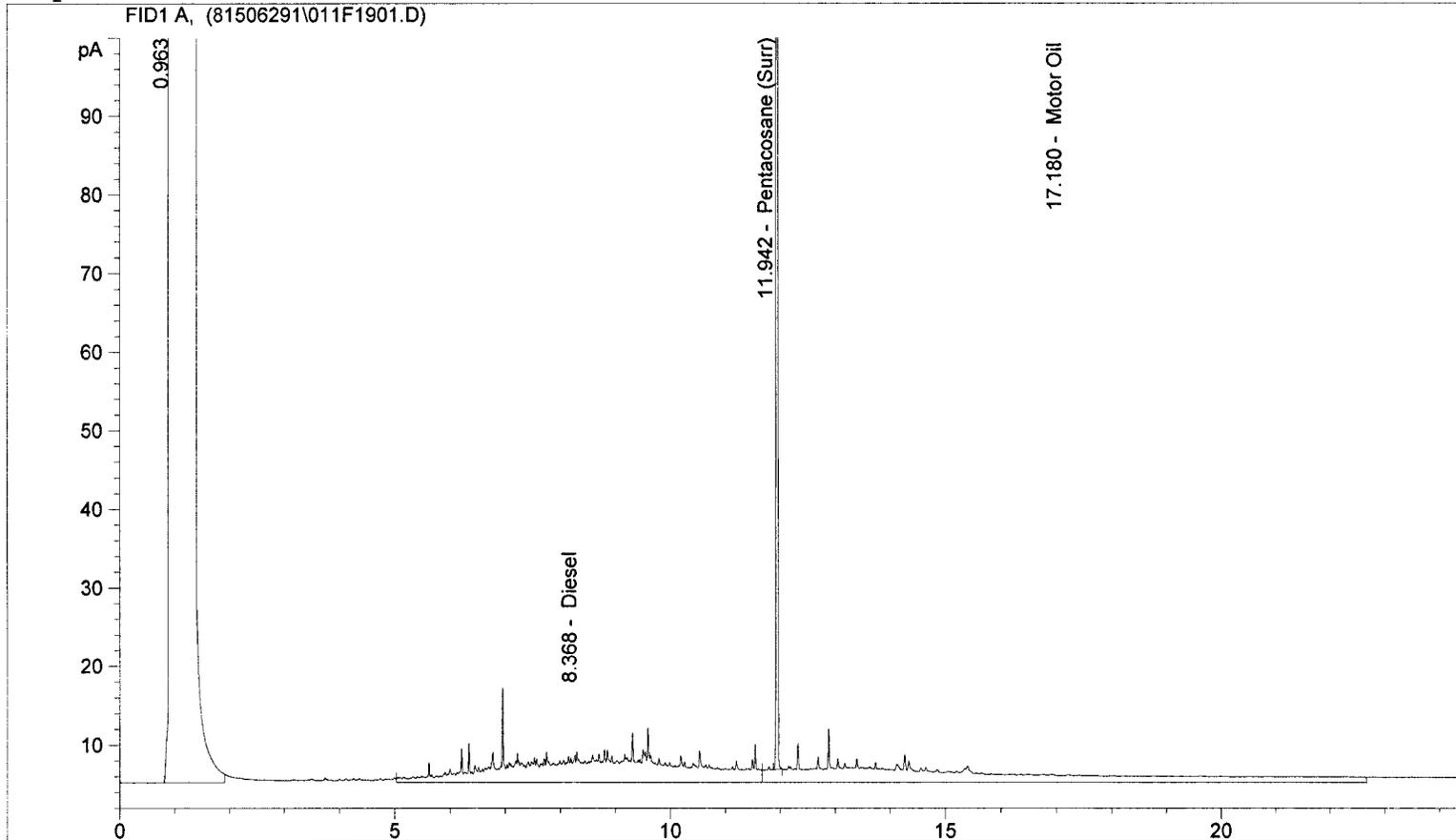
Unidentified Oil Range Product

(bias high due to Diesel Range Product overlap)

RE BY MS
E 7/2/15

6/30/15

Sample Name: EV15060175-09 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	833.026	71.921
11.942		Pentacosane (Surr)	935.317	38.519
17.180		Motor Oil	749.919	69.059

96%

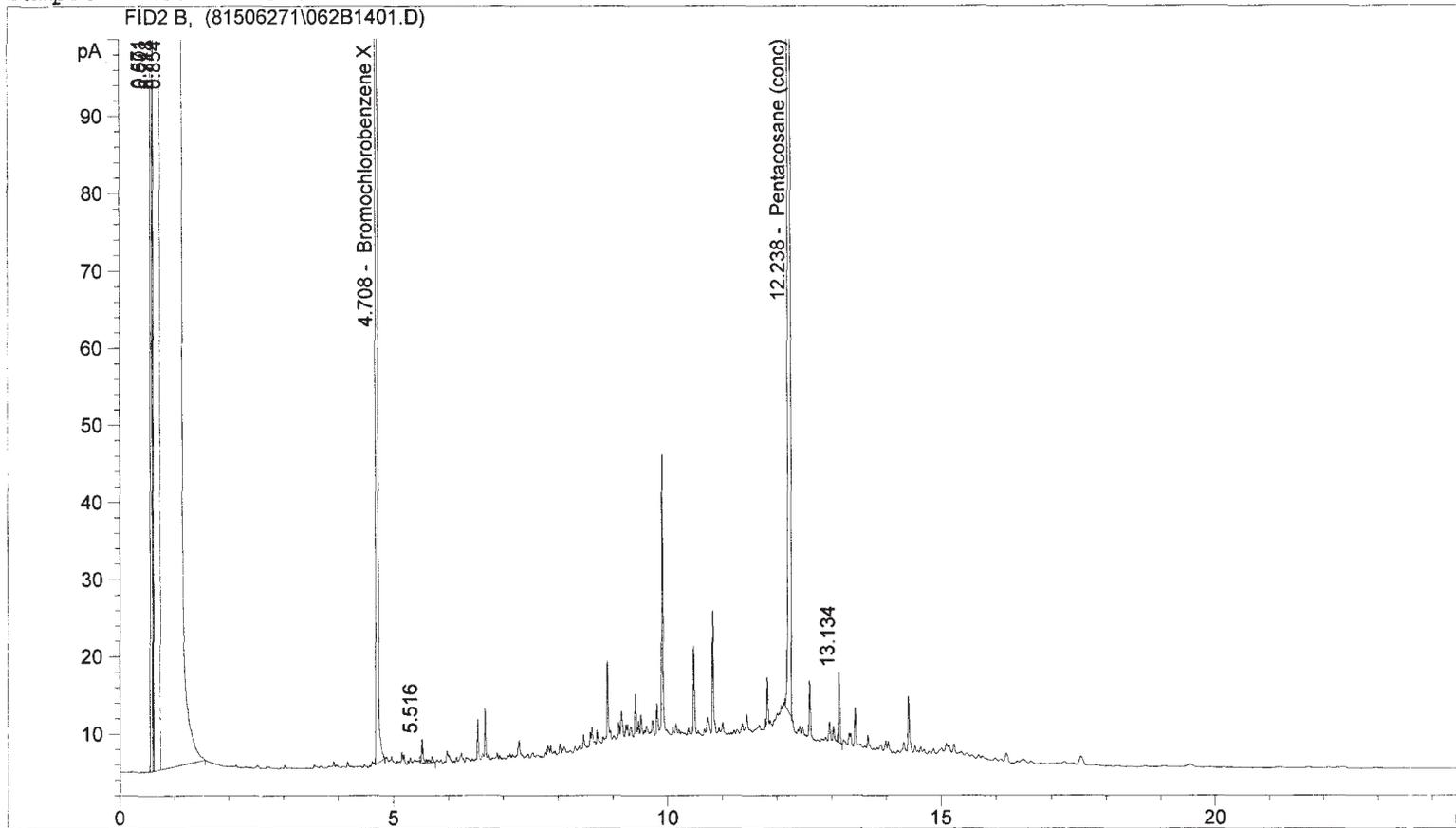
$D = 71.921 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 140 \text{ ug/L}$ Unidentified Diesel Range Product

$0 < 250 \text{ ug/L}$

RE BY MS
E 7/12/15

06.30.15a

Sample Name: EV15060175-10 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene X	2627.783	204.599
12.238		Pentacosane (conc)	2884.616	74.869

75%

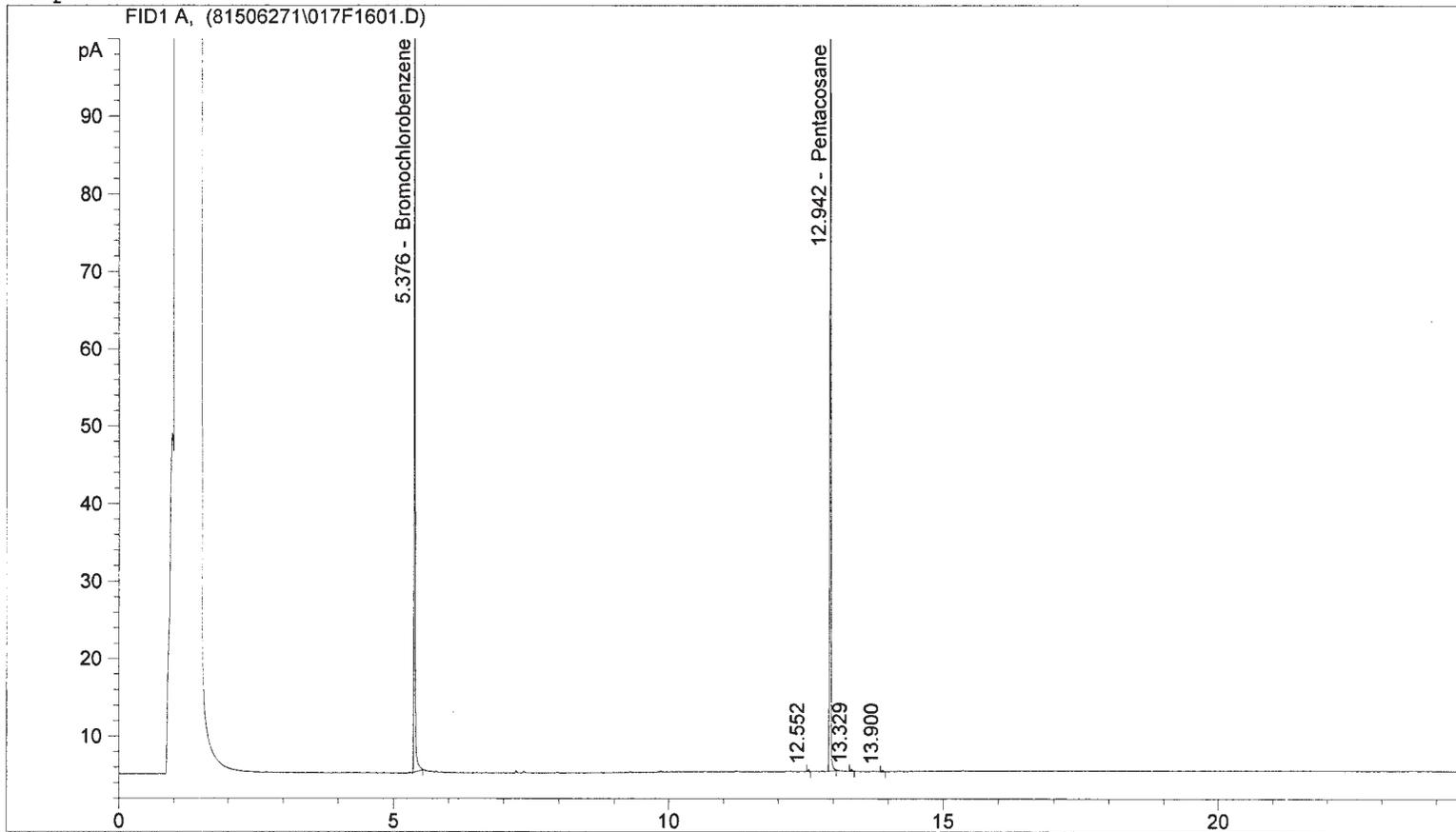
0 < 310 ug/L

RE BY 10/12/15
 E

06.30.1525

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\017F1601.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 6/27/2015 4:33:36 PM 6/27/2015 4:33:36 PM
 Report Creation: 6/29/2015 11:15:55 AM

Sample Name: EV15060175-11 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.376	FID1 A,	Bromochlorobenzene	143.801	24.878
12.942		Pentacosane	155.916	7.915

100%
79%

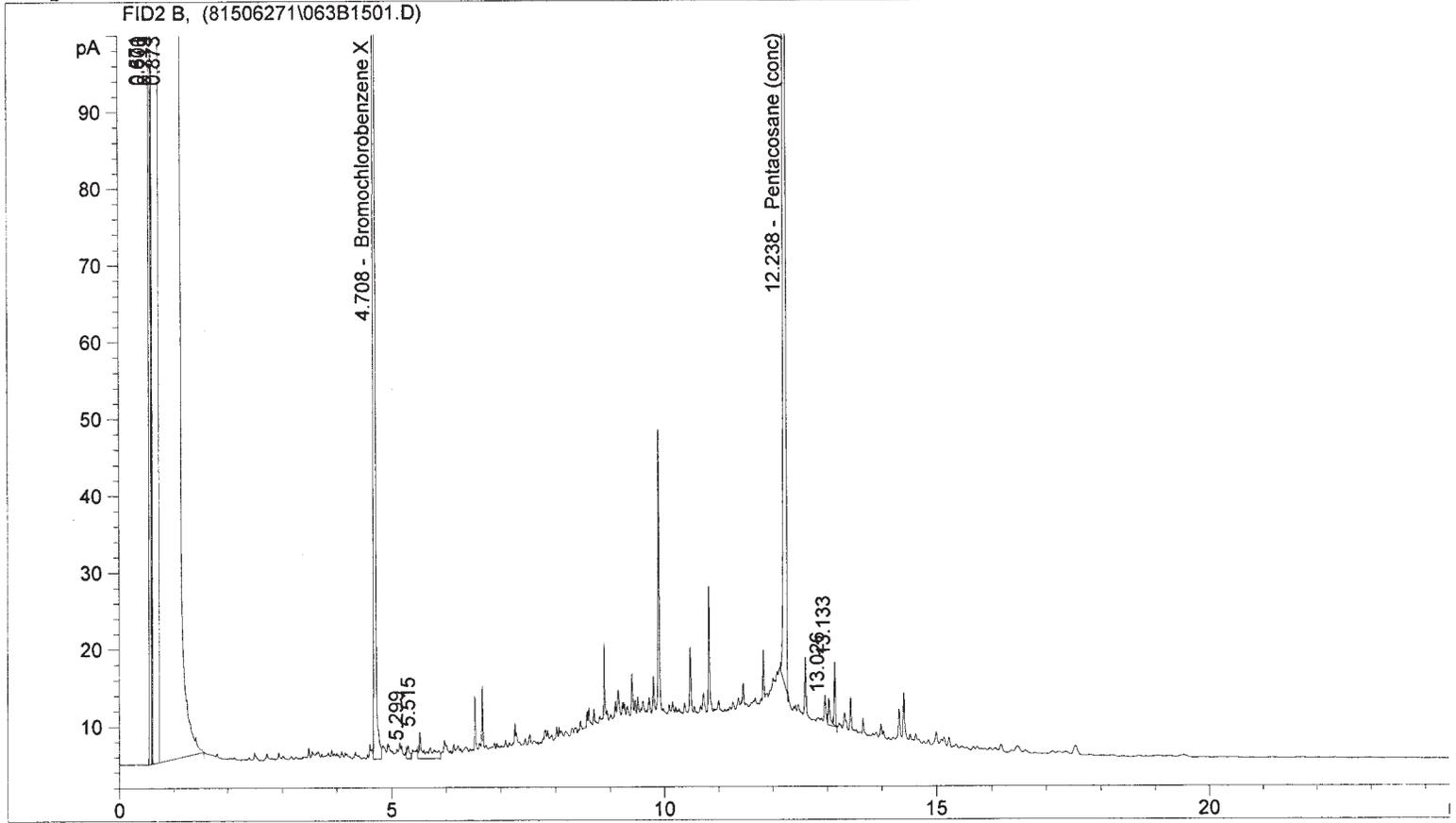
G < 130 µg/L
 D < 310 µg/L

RE BY 15/7/15
 E

06-30-15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\063B1501.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 6/27/2015 4:33:36 PM 6/27/2015 4:33:36 PM
 Report Creation: 6/30/2015 12:29:14 PM

Sample Name: EV15060175-11 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene X	2674.323	208.223
12.238		Pentacosane (conc)	2830.213	73.457

73%

0 < 310 µg/L

RE BY AB
 E 7/2/15

06.30.15E

EV15060175



Seattle/Edmonds (425) 778-0907
 Tacoma (253) 926-2493
 Spokane (509) 327-9737
 Portland (503) 542-1080

Chain-of-Custody Record

Date 6/24/15
 Page 1 of 1

Project Name Closed Yakima LE Project No. 1148008.030.032

Project Location/Event Closed City of Yakima LE/4th Quarter GW

Sampler's Name Stephanie Renando, Shane Kostka, Keenan Mussie

Project Contact Jeffrey Fellows, Stephanie Renando

Send Results To Bellows, A. Harverson, Kristi Schultz

Sample I.D.	Date	Time	Matrix	No. of Containers	Metals (Total Dissolved)	Conventional TDS	Alkalinity / Bicarbonate	Ammonia / TOC	Chlorinated Pesticides	PCB	VOC2	SVOC	PAH	TPH-HCTD	TPH-DX**	TPH-G	Observations/Comments
1 MW-9A-062415	6/24/15	0937	AQ	14	X	X	X	X	X	X	X	X	X	X	X	X	Allow water samples to settle, collect aliquot from clear portion NWTPh-Dx - run acid wash silica gel cleanup Analyze for EPH if no specific product identified VOC/BTEX/MPH (soil): — non-preserved — preserved w/methanol — preserved w/sodium bisulfate — Freeze upon receipt — Dissolved metal water samples field filtered Other: <u>As, Ba, Ca, Cd, Cr, Fe, K, Pb, Mg, Mn, Na, Se, Ag, Hg, I, F, NO₃, NO₂, Cl, SO₄</u> <u>2 = Include n-Hexane</u> <u>** = Run w/ AND w/out SGA</u> <u>O = Run w/ positive HCTD</u>
2 DUP2-062415	6/24/15	0940	AQ	14	X	X	X	X	X	X	X	X	X	X	X	X	
3 MW-16-062415	6/24/15	1012	AQ	9	X	X	X	X	X	X	X	X	X	X	X	X	
4 MW-100-062415	6/24/15	1051	AQ	14	X	X	X	X	X	X	X	X	X	X	X	X	
5 MW-17-062415	6/24/15	1120	AQ	14	X	X	X	X	X	X	X	X	X	X	X	X	
6 TP-MW-1-062415	6/24/15	1151	AQ	5	X	X	X	X	X	X	X	X	X	X	X	X	
7 MW-6-062415	6/24/15	1255	AQ	8	X	X	X	X	X	X	X	X	X	X	X	X	
8 FPP-MW-3-062415	6/24/15	1300	AQ	14	X	X	X	X	X	X	X	X	X	X	X	X	
9 FPP-MW-2-062415	6/24/15	1355	AQ	6	X	X	X	X	X	X	X	X	X	X	X	X	
10 MW-11-062415	6/24/15	1430	AQ	14	X	X	X	X	X	X	X	X	X	X	X	X	
11 MW-104-062415	6/24/15	1441	AQ	14	X	X	X	X	X	X	X	X	X	X	X	X	
12 TRP-BLATHS			AQ	2	X	X	X	X	X	X	X	X	X	X	X	X	

Note: Samples collected for dissolved metals have been field filtered.

Special Shipment/Handling or Storage Requirements: ON ICE

Method of Shipment: Fed Ex

Relinquished by	Received by
Signature: <u>[Signature]</u>	Signature: _____
Printed Name: <u>Stephanie Renando</u>	Printed Name: _____
Company: <u>Landau Associates</u>	Company: _____
Date: <u>6/24/15</u> Time: <u>1630</u>	Date: _____ Time: _____

Relinquished by: _____
 Received by: _____

Signature: _____
 Printed Name: _____
 Company: _____
 Date: _____ Time: _____

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV15060175

Project: Closed Yakima L.F. / #114

Received Date: 6/25/15 Received Time: 10:05am By: Su

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered

FedEx Express Priority Overnight

	Yes	No	N/A
Were custody seals on outside of sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1</u> Where? <u>outside each cooler</u>			
Custody seal date: <u>6/24/15</u> Seal name: <u>Landau</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: None

Temperature of cooler upon receipt: 1.7°C, 2.1°C, 3.6°C Cold Cool Ambient N/A

4.7°C, 1.8°C, 2.8°C all on ice

Explain any discrepancies: _____

Trip Blanks listed on coc but no trip blanks received.

Was client contacted? Yes Who was called? Stephanie By whom? Shawn Date: 6/25/15

Outcome of call: Cancel/Remove trip blanks from coc.



July 24, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On June 25th, 9 samples were received by our laboratory and assigned our laboratory project number EV15060181. The project was identified as your Yakima Landfill / #1148008.030.032. The sample identification and requested analyses are outlined on the attached chain of custody record.

Report is being re-issued to correct a data entry error made with regards to the Chloride results for our sample number -01. No other abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-01
CLIENT SAMPLE ID	MW-106-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 8:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	160	130	1	UG/L	06/27/2015	EBS
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	U	130	1	UG/L	06/27/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	250	1	UG/L	06/27/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	U	250	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-01
CLIENT SAMPLE ID	MW-106-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 8:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	0.059	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	0.034	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0091	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	0.013	0.013	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-01
CLIENT SAMPLE ID	MW-106-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 8:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.88	1	UG/L	07/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.84	1	UG/L	07/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-01
CLIENT SAMPLE ID	MW-106-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 8:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	0.022	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-01
CLIENT SAMPLE ID	MW-106-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 8:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4,4'-DDD	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Endosulfan II	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	200	5.0	1	MG/L	06/27/2015	DNT
Chloride	EPA-300.0	12	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/27/2015	GAP
Nitrate as N	EPA-300.0	0.088	0.034	1	MG/L	06/27/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	GAP
Sulfate	EPA-300.0	2.9	2.6	10	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	7.0 B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	64	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	32000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	28000	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	9600	50	1	UG/L	06/29/2015	RAL
Manganese	EPA-200.8	1900	2.0	1	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	9900	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	20000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	6.7	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	62	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	32000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	28000	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	9700	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	2100	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	9800	50	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-01
CLIENT SAMPLE ID	MW-106-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 8:51:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	19000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	190	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	190	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	8.4	0.25	5	MG/L	06/29/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.1	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	113	06/27/2015	EBS
C25	NWTPH-DX w/ SGA	125	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	101	06/26/2015	CCN
Toluene-d8	EPA-8260	103	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.0	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	98.4	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	87.2	07/06/2015	GAP
2-Fluorophenol	EPA-8270	51.8	07/07/2015	GAP
Phenol-d5	EPA-8270	31.5	07/07/2015	GAP
Nitrobenzene-d5	EPA-8270	48.1 GS1	07/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	86.4	07/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	59.4	07/07/2015	GAP
Terphenyl-d14	EPA-8270	57.4 GS1	07/07/2015	GAP
DCB	EPA-8082	104	07/06/2015	CAS
TCMX	EPA-8081	65.0	07/08/2015	CAS
DCB	EPA-8081	84.0	07/08/2015	CAS

GS1 - Surrogate outside of control limits due to matrix effect.

U - Analyte analyzed for but not detected at level above reporting limit.

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit. Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-02
CLIENT SAMPLE ID	MW-12-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	940	130	1	UG/L	06/28/2015	EBS
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	360	130	1	UG/L	06/28/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	560	250	1	UG/L	06/28/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	250	250	1	UG/L	06/28/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-02
CLIENT SAMPLE ID	MW-12-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-02
CLIENT SAMPLE ID	MW-12-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Anthracene	EPA-8270 SIM	0.013	0.01	1	UG/L	07/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	UG/L	07/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	UG/L	07/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-02
CLIENT SAMPLE ID	MW-12-062515	DATE RECEIVED:	06/25/2015
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	4.3	2.0	1	UG/L	07/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	UG/L	07/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

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SAMPLE DATA RESULTS

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4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	340	5.0	1	MG/L	06/27/2015	DNT
Chloride	EPA-300.0	15	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	0.29	0.16	1	MG/L	06/27/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/27/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	GAP
Sulfate	EPA-300.0	11	2.6	10	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	ND- B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	74	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	59000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	22000	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	21000	50	1	UG/L	06/29/2015	RAL
Manganese	EPA-200.8	2800	10	5	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	5900	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	60000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	70	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	57000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	21000	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	20000	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	2800	10	5	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	5700	50	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

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SAMPLE DATA RESULTS

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Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	57000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	380	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	380	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	1.0	0.050	1	MG/L	06/29/2015	CAS
Total Organic Carbon (TOC)	SM5310C	12	2.0	4	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	101	06/28/2015	EBS
C25	NWTPH-DX w/ SGA	109	06/28/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	100	06/26/2015	CCN
Toluene-d8	EPA-8260	101	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	98.6	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	107	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	84.3	07/06/2015	GAP
2-Fluorophenol	EPA-8270	87.3	07/07/2015	GAP
Phenol-d5	EPA-8270	54.0	07/07/2015	GAP
Nitrobenzene-d5	EPA-8270	78.5	07/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	141 GS1	07/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	96.1	07/07/2015	GAP
Terphenyl-d14	EPA-8270	97.2	07/07/2015	GAP
DCB	EPA-8082	107	07/06/2015	CAS
TCMX	EPA-8081	60.0	07/08/2015	CAS
DCB	EPA-8081	73.0	07/08/2015	CAS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 GS1 - Surrogate outside of control limits due to matrix effect.
 U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-03
CLIENT SAMPLE ID	DUP-1-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	180	130	1	UG/L	06/28/2015	EBS
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	U	130	1	UG/L	06/28/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	250	1	UG/L	06/28/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	U	250	1	UG/L	06/28/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-03
CLIENT SAMPLE ID	DUP-1-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	0.013	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	0.031	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0091	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-03
CLIENT SAMPLE ID	DUP-1-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 9:01:00 AM
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Anthracene	EPA-8270 SIM	0.015	0.01	1	UG/L	07/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.88	1	UG/L	07/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.84	1	UG/L	07/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP



CERTIFICATE OF ANALYSIS

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CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-03
CLIENT SAMPLE ID	DUP-1-062515	DATE RECEIVED:	06/25/2015
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/08/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	5.8	2.0	1	UG/L	07/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	0.0095	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

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SAMPLE DATA RESULTS

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4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	250	5.0	1	MG/L	06/27/2015	DNT
Chloride	EPA-300.0	12	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/27/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/27/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	GAP
Sulfate	EPA-300.0	3.0	2.6	10	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	6.6 B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	63	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	32000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	29000	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	9500	50	1	UG/L	06/29/2015	RAL
Manganese	EPA-200.8	1900	2.0	1	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	9900	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	20000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	8.3	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	61	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	33000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	28000	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	9700	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	2100	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	9900	50	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-03
CLIENT SAMPLE ID	DUP-1-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 9:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	19000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	200	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	200	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	8.4	0.25	5	MG/L	06/29/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.2	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	105	06/28/2015	EBS
C25	NWTPH-DX w/ SGA	92.2	06/28/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	99.7	06/26/2015	CCN
Toluene-d8	EPA-8260	102	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.0	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	101	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	87.4	07/06/2015	GAP
2-Fluorophenol	EPA-8270	88.6	07/08/2015	GAP
Phenol-d5	EPA-8270	57.5	07/08/2015	GAP
Nitrobenzene-d5	EPA-8270	82.3	07/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	138 GS1	07/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	97.1	07/08/2015	GAP
Terphenyl-d14	EPA-8270	96.5	07/08/2015	GAP
DCB	EPA-8082	105	07/06/2015	CAS
TCMX	EPA-8081	72.0	07/08/2015	CAS
DCB	EPA-8081	87.0	07/08/2015	CAS

GS1 - Surrogate outside of control limits due to matrix effect.

U - Analyte analyzed for but not detected at level above reporting limit.

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit. Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-04
CLIENT SAMPLE ID	MW-102-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-04
CLIENT SAMPLE ID	MW-102-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-04
CLIENT SAMPLE ID	MW-102-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0093	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	UG/L	07/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	UG/L	07/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-04
CLIENT SAMPLE ID	MW-102-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	UG/L	07/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-04
CLIENT SAMPLE ID	MW-102-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	200	5.0	1	MG/L	06/27/2015	DNT
Chloride	EPA-300.0	11	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/27/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/27/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	GAP
Sulfate	EPA-300.0	12	2.6	10	MG/L	06/26/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	ND- B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	31	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	27000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	6100	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	11000	50	1	UG/L	06/29/2015	RAL
Manganese	EPA-200.8	800	2.0	1	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	4700	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	16000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	30	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	27000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	6000	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	11000	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	800	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	4700	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-04
CLIENT SAMPLE ID	MW-102-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	16000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	140	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	140	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	2.3	0.050	1	MG/L	06/29/2015	CAS
Total Organic Carbon (TOC)	SM5310C	1.7	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	83.6	06/27/2015	EBS
C25	NWTPH-HCID	69.9	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	78.6	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	100	06/26/2015	CCN
Toluene-d8	EPA-8260	102	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	98.6	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	100	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	89.3	07/06/2015	GAP
2-Fluorophenol	EPA-8270	89.2	07/08/2015	GAP
Phenol-d5	EPA-8270	57.3	07/08/2015	GAP
Nitrobenzene-d5	EPA-8270	85.8	07/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	141 GS1	07/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	95.1	07/08/2015	GAP
Terphenyl-d14	EPA-8270	96.6	07/08/2015	GAP
DCB	EPA-8082	107	07/06/2015	CAS
TCMX	EPA-8081	71.0	07/08/2015	CAS
DCB	EPA-8081	84.0	07/08/2015	CAS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 GS1 - Surrogate outside of control limits due to matrix effect.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-05
CLIENT SAMPLE ID	MW-101-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 10:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	450	130	1	UG/L	06/28/2015	EBS
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	U	130	1	UG/L	06/28/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	280	250	1	UG/L	06/28/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	U	250	1	UG/L	06/28/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-05
CLIENT SAMPLE ID	MW-101-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 10:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0091	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-05
CLIENT SAMPLE ID	MW-101-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 10:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.88	1	UG/L	07/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.84	1	UG/L	07/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-05
CLIENT SAMPLE ID	MW-101-062515	DATE RECEIVED:	06/25/2015
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		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/08/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-05
CLIENT SAMPLE ID	MW-101-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 10:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	270	5.0	1	MG/L	07/01/2015	DNT
Chloride	EPA-300.0	10	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	0.18	0.16	1	MG/L	06/27/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/27/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	07/08/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	2.5 B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	56	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	44000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	17000	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	13000	50	1	UG/L	06/29/2015	RAL
Manganese	EPA-200.8	1800	2.0	1	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	9700	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	21000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.1	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	49	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	41000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	16000	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	1900	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	9100	50	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-05
CLIENT SAMPLE ID	MW-101-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 10:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	19000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	210	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	210	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	0.75	0.050	1	MG/L	06/29/2015	CAS
Total Organic Carbon (TOC)	SM5310C	10	2.0	4	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	103	06/28/2015	EBS
C25	NWTPH-DX w/ SGA	85.9	06/28/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	101	06/26/2015	CCN
Toluene-d8	EPA-8260	101	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.2	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	101	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	86.2	07/06/2015	GAP
2-Fluorophenol	EPA-8270	93.6	07/08/2015	GAP
Phenol-d5	EPA-8270	60.5	07/08/2015	GAP
Nitrobenzene-d5	EPA-8270	88.5	07/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	149 GS1	07/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	99.7	07/08/2015	GAP
Terphenyl-d14	EPA-8270	97.2	07/08/2015	GAP
DCB	EPA-8082	106	07/06/2015	CAS
TCMX	EPA-8081	60.0	07/08/2015	CAS
DCB	EPA-8081	71.0	07/08/2015	CAS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 GS1 - Surrogate outside of control limits due to matrix effect.
 U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.
 Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-06
CLIENT SAMPLE ID	MW-105-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 11:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-06
CLIENT SAMPLE ID	MW-105-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 11:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	0.10	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-06
CLIENT SAMPLE ID	MW-105-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 11:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	0.018	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	0.035	0.01	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	UG/L	07/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	UG/L	07/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-06
CLIENT SAMPLE ID	MW-105-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 11:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	UG/L	07/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	0.013	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-06
CLIENT SAMPLE ID	MW-105-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 11:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	0.012	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	240	5.0	1	MG/L	07/01/2015	DNT
Chloride	EPA-300.0	5.9	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/27/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/27/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	GAP
Sulfate	EPA-300.0	1.6	0.26	1	MG/L	06/27/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	3.2 B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	34	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	22000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	17000	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	6800	50	1	UG/L	06/29/2015	RAL
Manganese	EPA-200.8	1700	2.0	1	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	5500	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	11000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	2.8	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	32	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	21000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	17000	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	6500	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	1700	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	5400	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-06
CLIENT SAMPLE ID	MW-105-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 11:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	11000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	110	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	110	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	0.89	0.050	1	MG/L	06/29/2015	CAS
Total Organic Carbon (TOC)	SM5310C	5.9	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	86.2	06/27/2015	EBS
C25	NWTPH-HCID	75.1	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	79.0	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	100	06/26/2015	CCN
Toluene-d8	EPA-8260	100	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.4	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	86.4	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	68.6	07/06/2015	GAP
2-Fluorophenol	EPA-8270	67.9	07/08/2015	GAP
Phenol-d5	EPA-8270	43.7	07/08/2015	GAP
Nitrobenzene-d5	EPA-8270	65.9	07/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	112	07/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	76.9	07/08/2015	GAP
Terphenyl-d14	EPA-8270	76.0	07/08/2015	GAP
DCB	EPA-8082	88.0	07/06/2015	CAS
TCMX	EPA-8081	66.0	07/08/2015	CAS
DCB	EPA-8081	77.0	07/08/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-07
CLIENT SAMPLE ID	MW-18-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-07
CLIENT SAMPLE ID	MW-18-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	0.019	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0091	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-07
CLIENT SAMPLE ID	MW-18-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/08/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.88	1	UG/L	07/08/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/08/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.84	1	UG/L	07/08/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/08/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-07
CLIENT SAMPLE ID	MW-18-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/08/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/08/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/08/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/08/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.76	1	UG/L	07/08/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/08/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-07
CLIENT SAMPLE ID	MW-18-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	0.036	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	310	5.0	1	MG/L	07/01/2015	DNT
Chloride	EPA-300.0	16	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/27/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/27/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	06/27/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	7.7 B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	41	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	53000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	46000	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	ND- B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	22000	50	1	UG/L	06/29/2015	RAL
Manganese	EPA-200.8	4900	10	5	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	3300	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	15000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	7.7	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	40	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	51000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	44000	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	21000	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	4600	10	5	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	3300	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-07
CLIENT SAMPLE ID	MW-18-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	14000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	260	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	260	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	0.50	0.050	1	MG/L	06/29/2015	CAS
Total Organic Carbon (TOC)	SM5310C	8.6	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	80.0	06/27/2015	EBS
C25	NWTPH-HCID	67.5	06/27/2015	EBS
C25 (conc)	NWTPH-HCID	75.9	06/27/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	101	06/26/2015	CCN
Toluene-d8	EPA-8260	102	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.6	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	99.9	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	85.5	07/06/2015	GAP
2-Fluorophenol	EPA-8270	86.9	07/08/2015	GAP
Phenol-d5	EPA-8270	56.2	07/08/2015	GAP
Nitrobenzene-d5	EPA-8270	84.9	07/08/2015	GAP
2-Fluorobiphenyl	EPA-8270	140 GS1	07/08/2015	GAP
2,4,6-Tribromophenol	EPA-8270	93.3	07/08/2015	GAP
Terphenyl-d14	EPA-8270	90.7	07/08/2015	GAP
DCB	EPA-8082	109	07/06/2015	CAS
TCMX	EPA-8081	66.0	07/08/2015	CAS
DCB	EPA-8081	81.0	07/08/2015	CAS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 GS1 - Surrogate outside of control limits due to matrix effect.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-08
CLIENT SAMPLE ID	TP-MW-2-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 12:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	1400	130	1	UG/L	06/28/2015	EBS
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	430	130	1	UG/L	06/28/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	700	250	1	UG/L	06/28/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	320	250	1	UG/L	06/28/2015	EBS
Total Dissolved Solids	SM2540C	520	5.0	1	MG/L	07/01/2015	DNT
Chloride	EPA-300.0	10	0.92	10	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	0.19	0.16	1	MG/L	06/27/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/27/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	GAP
Sulfate	EPA-300.0	0.99	0.26	1	MG/L	06/27/2015	GAP
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL
Arsenic	EPA-200.8	6.8 B	0.45	1	UG/L	06/29/2015	RAL
Barium	EPA-200.8	55	1.0	1	UG/L	06/29/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/29/2015	RAL
Calcium	EPA-200.8	41000 B	100	1	UG/L	06/29/2015	RAL
Chromium	EPA-200.8	8.6	2.0	1	UG/L	06/29/2015	RAL
Iron	EPA-200.8	20000	50	1	UG/L	06/29/2015	RAL
Lead	EPA-200.8	2.2 B	0.28	1	UG/L	06/29/2015	RAL
Magnesium	EPA-200.8	12000	50	1	UG/L	06/29/2015	RAL
Manganese	EPA-200.8	1000	2.0	1	UG/L	06/29/2015	RAL
Potassium	EPA-200.8	6600	50	1	UG/L	06/29/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/29/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/29/2015	RAL
Sodium	EPA-200.8	65000	50	1	UG/L	06/29/2015	RAL
Arsenic (Dissolved)	EPA-200.8	5.5	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	43	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	38000	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	3.3	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	15000	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	0.75	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	960	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	6500	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	59000	50	1	UG/L	06/30/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	280	15	1	MG/L	07/07/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-08
CLIENT SAMPLE ID	TP-MW-2-062515	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015 12:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bicarbonate as CaCO3	SM2320B	280	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	2.8	0.050	1	MG/L	06/29/2015	CAS
Total Organic Carbon (TOC)	SM5310C	100	10	20	MG/L	07/08/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	91.4	06/28/2015	EBS
C25	NWTPH-DX w/ SGA	97.5	06/28/2015	EBS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-09
CLIENT SAMPLE ID	TRIP BLANKS	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060181-09
CLIENT SAMPLE ID	TRIP BLANKS	DATE RECEIVED:	06/25/2015
		COLLECTION DATE:	6/25/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	100	06/26/2015	CCN
Toluene-d8	EPA-8260	101	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.6	06/26/2015	CCN

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/24/2015
 130 - 2nd Ave. S. ALS SDG#: EV15060181
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY BLANK RESULTS

MB-062615W - Batch 94803 - Water by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062215W - Batch 94547 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	130	1	UG/L	06/22/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	250	1	UG/L	06/22/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062615W - Batch 94804 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	130	1	UG/L	06/28/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	250	1	UG/L	06/28/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062315W - Batch 94635 - Water by EPA-8260 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/23/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/23/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/23/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/23/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/23/2015	CCN

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-062315W - Batch 94635 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS ANALYSIS	
						DATE	BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/23/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/23/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/23/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/23/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/23/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/23/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/23/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/23/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/23/2015	CCN
Toluene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/23/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/23/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/23/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/23/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/23/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-062315W - Batch 94635 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/23/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/23/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/23/2015	CCN

U - Analyte analyzed for but not detected at level above reporting limit.

MB-063015W - Batch 95020 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.015	1	UG/L	07/01/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0097	1	UG/L	07/01/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	UG/L	07/01/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/01/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0098	1	UG/L	07/01/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/01/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.018	1	UG/L	07/01/2015	GAP
Chrysene	EPA-8270 SIM	U	0.019	1	UG/L	07/01/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0073	1	UG/L	07/01/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.014	1	UG/L	07/01/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	UG/L	07/01/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.015	1	UG/L	07/01/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	UG/L	07/01/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	UG/L	07/01/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
 130 - 2nd Ave. S.
 Edmonds, WA 98020

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030.032

DATE: 7/24/2015
 ALS SDG#: EV15060181
 WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-063015W - Batch 95020 - Water by EPA-8270 SIM

U - Analyte analyzed for but not detected at level above reporting limit.

MB-063015W - Batch 95023 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Pyridine	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	UG/L	07/06/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	UG/L	07/06/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Hexachloroethane	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/06/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	UG/L	07/06/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.90	1	UG/L	07/06/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	UG/L	07/06/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/06/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/06/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	UG/L	07/06/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-063015W - Batch 95023 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Azobenzene	EPA-8270	U	1.6	1	UG/L	07/06/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.81	1	UG/L	07/06/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/06/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/06/2015 - Batch R258231 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0078	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/08/2015 - Batch R258232 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/24/2015
 130 - 2nd Ave. S. ALS SDG#: EV15060181
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY BLANK RESULTS

MB1-07/08/2015 - Batch R258232 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endrin	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
4,4'-DDD	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Endosulfan II	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.0099	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-258237 - Batch R258237 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	06/27/2015	DNT
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	07/01/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-257695 - Batch R257695 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	06/26/2015	GAP
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/26/2015	GAP
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/26/2015	GAP
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/26/2015	GAP
Sulfate	EPA-300.0	U	0.26	1	MG/L	06/26/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-257691 - Batch R257691 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-257686 - Batch R257686 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	06/29/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-062615W - Batch 94695 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS ANALYSIS	
						DATE	BY
Arsenic	EPA-200.8	0.52	0.45	1	UG/L	06/26/2015	RAL
Barium	EPA-200.8	U	1.0	1	UG/L	06/26/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	06/26/2015	RAL
Calcium	EPA-200.8	130	100	1	UG/L	06/26/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	06/26/2015	RAL
Iron	EPA-200.8	U	50	1	UG/L	06/26/2015	RAL
Lead	EPA-200.8	0.29	0.28	1	UG/L	06/26/2015	RAL
Magnesium	EPA-200.8	U	50	1	UG/L	06/26/2015	RAL
Manganese	EPA-200.8	U	2.0	1	UG/L	06/26/2015	RAL
Potassium	EPA-200.8	U	50	1	UG/L	06/26/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	06/26/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	06/26/2015	RAL
Sodium	EPA-200.8	U	50	1	UG/L	06/26/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062915W - Batch 94808 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS ANALYSIS	
						DATE	BY
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	UG/L	06/30/2015	RAL
Barium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	06/30/2015	RAL
Calcium (Dissolved)	EPA-200.8	U	100	1	UG/L	06/30/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	UG/L	06/30/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	06/30/2015	RAL
Magnesium (Dissolved)	EPA-200.8	U	50	1	UG/L	06/30/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	UG/L	06/30/2015	RAL
Potassium (Dissolved)	EPA-200.8	U	50	1	UG/L	06/30/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	06/30/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	06/30/2015	RAL
Sodium (Dissolved)	EPA-200.8	U	50	1	UG/L	06/30/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/07/2015 - Batch R258230 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS ANALYSIS	
						DATE	BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	07/07/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/24/2015
 130 - 2nd Ave. S. ALS SDG#: EV15060181
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY BLANK RESULTS

MB1-07/07/2015 - Batch R258230 - Water by SM2320B

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-06/29/2015 - Batch R258229 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	06/29/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/01/2015 - Batch R258228 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	07/01/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB2-07/08/2015 - Batch R258228 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	07/08/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB3-07/08/2015 - Batch R258228 - Water by SM5310C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC)	SM5310C	U	0.50	1	MG/L	07/08/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 94547 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24) - BS	NWTPH-DX	91.2			06/22/2015	EBS
TPH-Diesel Range (C12-C24) - BSD	NWTPH-DX	91.7	1		06/22/2015	EBS

ALS Test Batch ID: 94804 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24) - BS	NWTPH-DX	85.5			06/28/2015	EBS
TPH-Diesel Range (C12-C24) - BSD	NWTPH-DX	93.9	9		06/28/2015	EBS

ALS Test Batch ID: 94635 - Water by EPA-8260 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Trichloroethene - BS	EPA-8260 SIM	92.1			06/23/2015	CCN
Trichloroethene - BSD	EPA-8260 SIM	92.0	0		06/23/2015	CCN

ALS Test Batch ID: 94635 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	89.0			06/23/2015	CCN
1,1-Dichloroethene - BSD	EPA-8260	86.8	3		06/23/2015	CCN
Benzene - BS	EPA-8260	95.2			06/23/2015	CCN
Benzene - BSD	EPA-8260	95.1	0		06/23/2015	CCN
Toluene - BS	EPA-8260	95.3			06/23/2015	CCN
Toluene - BSD	EPA-8260	96.0	1		06/23/2015	CCN
Chlorobenzene - BS	EPA-8260	98.5			06/23/2015	CCN
Chlorobenzene - BSD	EPA-8260	101	2		06/23/2015	CCN

ALS Test Batch ID: 95023 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	35.6			07/06/2015	GAP
Phenol - BSD	EPA-8270	37.9	6		07/07/2015	GAP
2-Chlorophenol - BS	EPA-8270	90.8			07/06/2015	GAP
2-Chlorophenol - BSD	EPA-8270	94.9	4		07/07/2015	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	98.8			07/06/2015	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	104	5		07/07/2015	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	92.3			07/06/2015	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	96.6	5		07/07/2015	GAP
4-Nitrophenol - BS	EPA-8270	19.5			07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
4-Nitrophenol - BSD	EPA-8270	22.6	15		07/07/2015	GAP
2,4-Dinitrotoluene - BS	EPA-8270	71.7			07/06/2015	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	77.1	7		07/07/2015	GAP
Pyrene - BS	EPA-8270	114			07/06/2015	GAP
Pyrene - BSD	EPA-8270	119	5		07/07/2015	GAP

ALS Test Batch ID: R258231 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	83.0			07/06/2015	CAS
PCB-1016 - BSD	EPA-8082	84.0	1		07/06/2015	CAS
PCB-1260 - BS	EPA-8082	91.0			07/06/2015	CAS
PCB-1260 - BSD	EPA-8082	91.5	1		07/06/2015	CAS

ALS Test Batch ID: R258232 - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	84.5			07/08/2015	CAS
A-BHC - BSD	EPA-8081	82.0	3		07/08/2015	CAS
G-BHC - BS	EPA-8081	84.0			07/08/2015	CAS
G-BHC - BSD	EPA-8081	81.0	4		07/08/2015	CAS
B-BHC - BS	EPA-8081	86.5			07/08/2015	CAS
B-BHC - BSD	EPA-8081	78.5	10		07/08/2015	CAS
Heptachlor - BS	EPA-8081	78.5			07/08/2015	CAS
Heptachlor - BSD	EPA-8081	74.5	5		07/08/2015	CAS
D-BHC - BS	EPA-8081	85.5			07/08/2015	CAS
D-BHC - BSD	EPA-8081	82.5	4		07/08/2015	CAS
Aldrin - BS	EPA-8081	74.0			07/08/2015	CAS
Aldrin - BSD	EPA-8081	72.5	2		07/08/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	82.0			07/08/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	80.5	2		07/08/2015	CAS
Chlordane - BS	EPA-8081	79.0			07/08/2015	CAS
Chlordane - BSD	EPA-8081	76.0	4		07/08/2015	CAS
Endosulfan I - BS	EPA-8081	62.5			07/08/2015	CAS
Endosulfan I - BSD	EPA-8081	61.0	2		07/08/2015	CAS
4,4'-DDE - BS	EPA-8081	80.5			07/08/2015	CAS
4,4'-DDE - BSD	EPA-8081	75.5	6		07/08/2015	CAS
Dieldrin - BS	EPA-8081	82.5			07/08/2015	CAS
Dieldrin - BSD	EPA-8081	80.5	2		07/08/2015	CAS
Endrin - BS	EPA-8081	86.5			07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Endrin - BSD	EPA-8081	84.0	3		07/08/2015	CAS
4,4'-DDD - BS	EPA-8081	78.5			07/08/2015	CAS
4,4'-DDD - BSD	EPA-8081	75.0	5		07/08/2015	CAS
Endosulfan II - BS	EPA-8081	67.0			07/08/2015	CAS
Endosulfan II - BSD	EPA-8081	65.0	3		07/08/2015	CAS
4,4'-DDT - BS	EPA-8081	77.0			07/08/2015	CAS
4,4'-DDT - BSD	EPA-8081	70.0	10		07/08/2015	CAS
Endrin Aldehyde - BS	EPA-8081	74.5			07/08/2015	CAS
Endrin Aldehyde - BSD	EPA-8081	70.0	6		07/08/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	80.0			07/08/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	77.5	3		07/08/2015	CAS
Methoxychlor - BS	EPA-8081	73.5			07/08/2015	CAS
Methoxychlor - BSD	EPA-8081	68.0	8		07/08/2015	CAS
Hexachlorobenzene - BS	EPA-8081	86.5			07/08/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	85.0	2		07/08/2015	CAS
Toxaphene - BS	EPA-8081	93.4			07/08/2015	CAS
Toxaphene - BSD	EPA-8081	87.3	7		07/08/2015	CAS

ALS Test Batch ID: R258237 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	96.0			06/27/2015	DNT
Total Dissolved Solids - BSD	SM2540C	85.6			07/01/2015	DNT

ALS Test Batch ID: R257695 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	96.5			06/26/2015	GAP
Chloride - BSD	EPA-300.0	93.5	3		06/26/2015	GAP
Fluoride - BS	EPA-300.0	106			06/26/2015	GAP
Fluoride - BSD	EPA-300.0	106	0		06/26/2015	GAP
Nitrate as N - BS	EPA-300.0	100			06/26/2015	GAP
Nitrate as N - BSD	EPA-300.0	99.0	1		06/26/2015	GAP
Nitrite as N - BS	EPA-300.0	93.5			06/26/2015	GAP
Nitrite as N - BSD	EPA-300.0	88.5	5		06/26/2015	GAP
Sulfate - BS	EPA-300.0	106			06/26/2015	GAP
Sulfate - BSD	EPA-300.0	100	5		06/26/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R257691 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	96.0			06/29/2015	RAL
Mercury - BSD	EPA-7470	93.0	3		06/29/2015	RAL

ALS Test Batch ID: R257686 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	99.0			06/29/2015	RAL
Mercury (Dissolved) - BSD	EPA-7470	95.0	4		06/29/2015	RAL

ALS Test Batch ID: 94695 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	95.1		B	06/26/2015	RAL
Arsenic - BSD	EPA-200.8	94.5	1	B	06/26/2015	RAL
Barium - BS	EPA-200.8	97.3			06/26/2015	RAL
Barium - BSD	EPA-200.8	95.8	2		06/26/2015	RAL
Cadmium - BS	EPA-200.8	97.2			06/26/2015	RAL
Cadmium - BSD	EPA-200.8	96.6	1		06/26/2015	RAL
Calcium - BS	EPA-200.8	95.3		B	06/26/2015	RAL
Calcium - BSD	EPA-200.8	92.1	3	B	06/26/2015	RAL
Chromium - BS	EPA-200.8	92.1			06/26/2015	RAL
Chromium - BSD	EPA-200.8	91.1	1		06/26/2015	RAL
Iron - BS	EPA-200.8	93.6			06/26/2015	RAL
Iron - BSD	EPA-200.8	92.7	1		06/26/2015	RAL
Lead - BS	EPA-200.8	95.7		B	06/26/2015	RAL
Lead - BSD	EPA-200.8	94.1	2	B	06/26/2015	RAL
Magnesium - BS	EPA-200.8	88.8			06/26/2015	RAL
Magnesium - BSD	EPA-200.8	86.0	3		06/26/2015	RAL
Manganese - BS	EPA-200.8	95.1			06/26/2015	RAL
Manganese - BSD	EPA-200.8	93.3	2		06/26/2015	RAL
Potassium - BS	EPA-200.8	92.6			06/26/2015	RAL
Potassium - BSD	EPA-200.8	90.0	3		06/26/2015	RAL
Selenium - BS	EPA-200.8	99.1			06/26/2015	RAL
Selenium - BSD	EPA-200.8	96.6	3		06/26/2015	RAL
Silver - BS	EPA-200.8	96.2			06/26/2015	RAL
Silver - BSD	EPA-200.8	94.8	2		06/26/2015	RAL
Sodium - BS	EPA-200.8	87.8			06/26/2015	RAL
Sodium - BSD	EPA-200.8	85.9	2		06/26/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/24/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060181
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.

ALS Test Batch ID: 94808 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	102			06/30/2015	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	101	0		06/30/2015	RAL
Barium (Dissolved) - BS	EPA-200.8	100			06/30/2015	RAL
Barium (Dissolved) - BSD	EPA-200.8	99.4	1		06/30/2015	RAL
Cadmium (Dissolved) - BS	EPA-200.8	104			06/30/2015	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	100	3		06/30/2015	RAL
Calcium (Dissolved) - BS	EPA-200.8	99.9			06/30/2015	RAL
Calcium (Dissolved) - BSD	EPA-200.8	97.4	3		06/30/2015	RAL
Chromium (Dissolved) - BS	EPA-200.8	100			06/30/2015	RAL
Chromium (Dissolved) - BSD	EPA-200.8	98.0	3		06/30/2015	RAL
Iron (Dissolved) - BS	EPA-200.8	101			06/30/2015	RAL
Iron (Dissolved) - BSD	EPA-200.8	98.0	3		06/30/2015	RAL
Lead (Dissolved) - BS	EPA-200.8	102			06/30/2015	RAL
Lead (Dissolved) - BSD	EPA-200.8	98.9	3		06/30/2015	RAL
Magnesium (Dissolved) - BS	EPA-200.8	99.8			06/30/2015	RAL
Magnesium (Dissolved) - BSD	EPA-200.8	96.2	4		06/30/2015	RAL
Manganese (Dissolved) - BS	EPA-200.8	102			06/30/2015	RAL
Manganese (Dissolved) - BSD	EPA-200.8	99.3	3		06/30/2015	RAL
Potassium (Dissolved) - BS	EPA-200.8	99.2			06/30/2015	RAL
Potassium (Dissolved) - BSD	EPA-200.8	95.9	3		06/30/2015	RAL
Selenium (Dissolved) - BS	EPA-200.8	102			06/30/2015	RAL
Selenium (Dissolved) - BSD	EPA-200.8	102	0		06/30/2015	RAL
Silver (Dissolved) - BS	EPA-200.8	103			06/30/2015	RAL
Silver (Dissolved) - BSD	EPA-200.8	98.4	4		06/30/2015	RAL
Sodium (Dissolved) - BS	EPA-200.8	98.4			06/30/2015	RAL
Sodium (Dissolved) - BSD	EPA-200.8	95.3	3		06/30/2015	RAL

ALS Test Batch ID: R258230 - Water by SM2320B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total - BS	SM2320B	103			07/07/2015	CAS

ALS Test Batch ID: R258229 - Water by EPA-350.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N 5X Dilution - BS	EPA-350.1	98.3			06/29/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/24/2015
130 - 2nd Ave. S. ALS SDG#: EV15060181
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R258228 - Water by SM5310C

Table with 7 columns: SPIKED COMPOUND, METHOD, %REC, RPD, QUAL, ANALYSIS DATE, ANALYSIS BY. Rows include Total Organic Carbon (TOC) - BS with values 94.9 and 96.0.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 7/24/2015	ALS SDG#: EV15060181
CLIENT CONTACT:	Jeffrey Fellows	WDOE ACCREDITATION:	C601
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032		

MATRIX SPIKE RESULTS

ALS Test Batch ID: R258228 - Water

Parent Sample: **MW-106-062515**

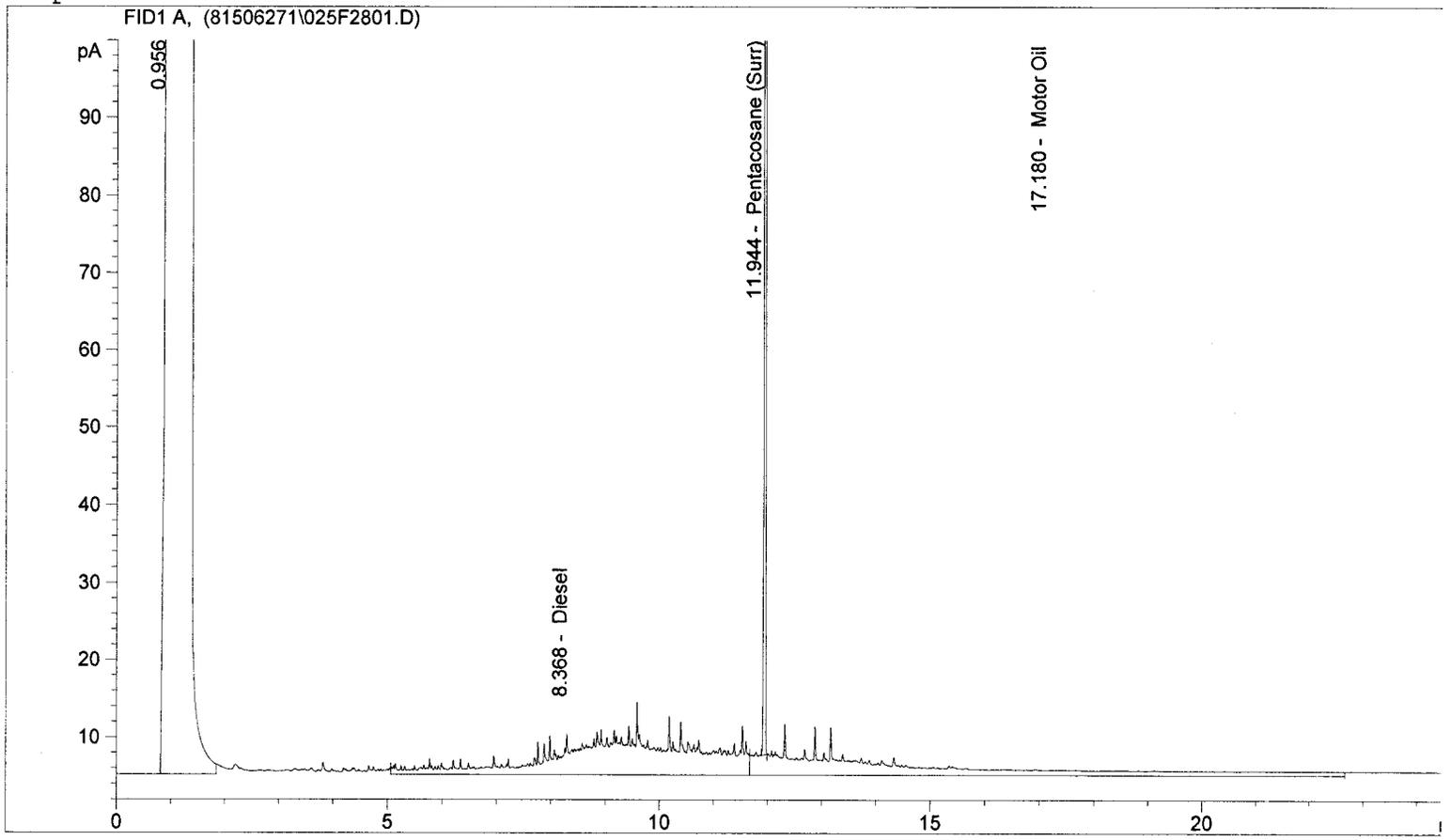
SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - MS	SM5310C	4.1	25.0	31.0		108		07/01/2015	CAS

APPROVED BY



Laboratory Director

Sample Name: EV15060181-01 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	941.970	81.327
11.944		Pentacosane (Surr)	1096.398	45.153
17.180		Motor Oil	667.836	61.500

113/

$D = 81.327 \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 160 \mu\text{g/L}$ Unidentified Diesel Range Product

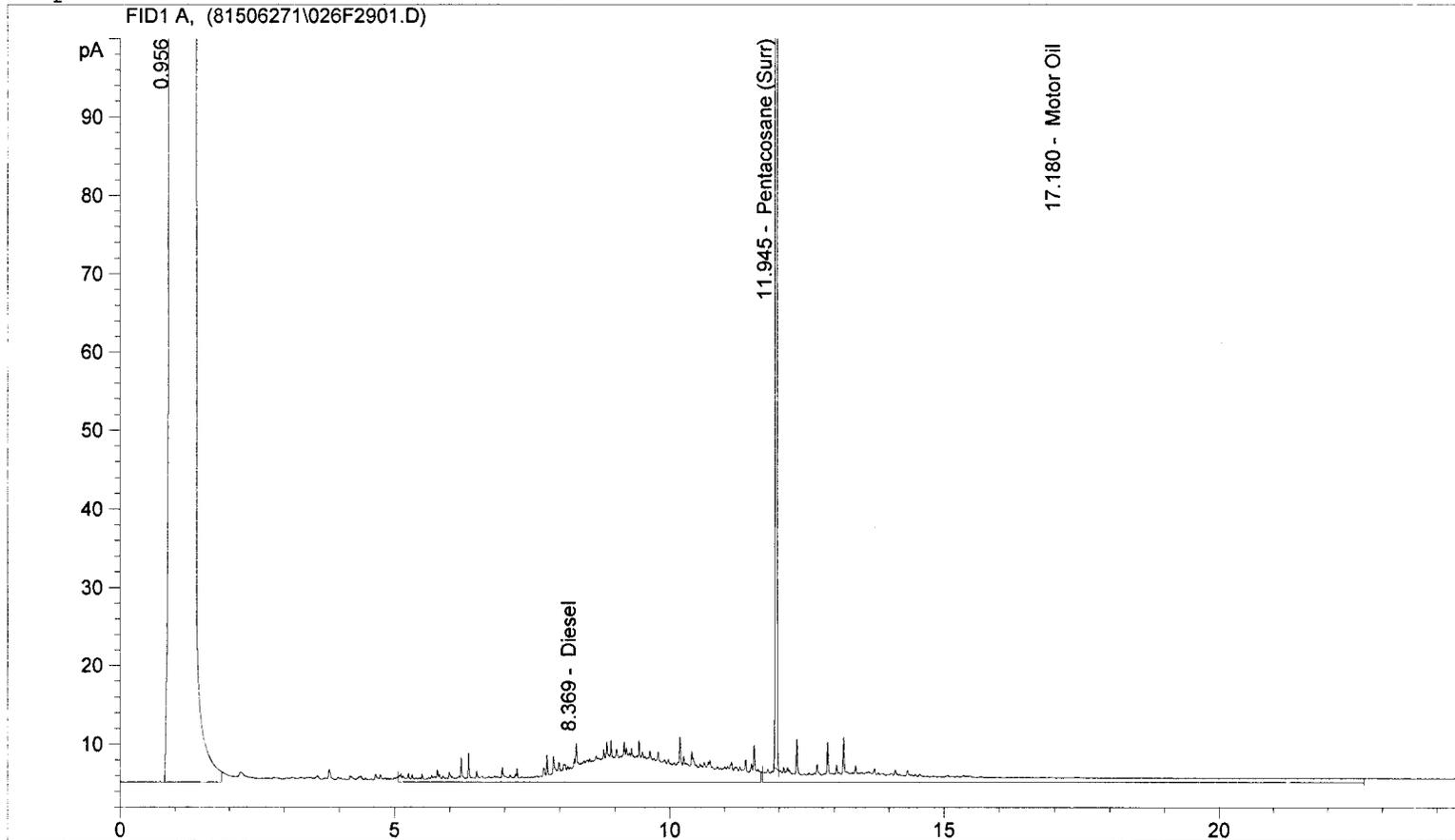
$0 < 250 \mu\text{g/L}$

REVIEWED BY MB
 DATE 7/2/15

06.30.15EJ

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\026F2901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FDMO0914.M
 Injection Date & Time: 6/27/2015 11:58:51 PM 6/27/2015 11:58:51 PM
 Report Creation: 6/29/2015 11:21:21 AM

Sample Name: EV15060181-01 W SGA ->
 FID1 A, (81506271\026F2901.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.369	FID1 A,	Diesel	699.824	60.421
11.945		Pentacosane (Surr)	1213.469	49.974
17.180		Motor Oil	484.105	44.580

125%

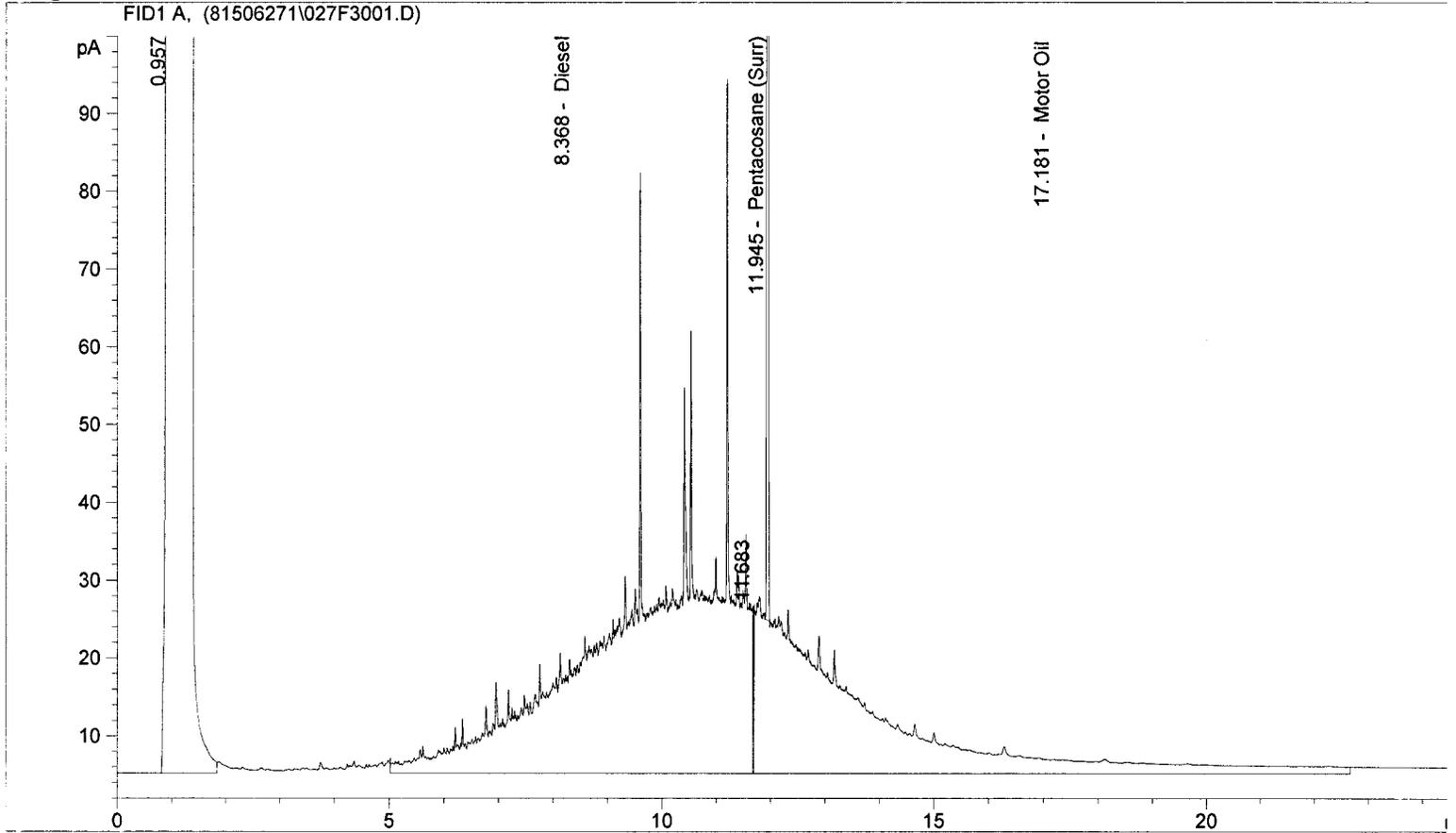
D < 130 ug/L

O < 250 ug/L

REVIEWED BY *MB*
 DATE *7/2/15*

06.30.15E

Sample Name: EV15060181-02 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	5410.870	467.161
11.945		Pentacosane (Surr)	985.224	40.575
17.181		Motor Oil	3002.249	276.472

101%

$D = 467.161 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 940 \text{ ug/L}$ Unidentified Diesel Range Product

$O = 276.475 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 560 \text{ ug/L}$ Unidentified Oil Range Product
 ES

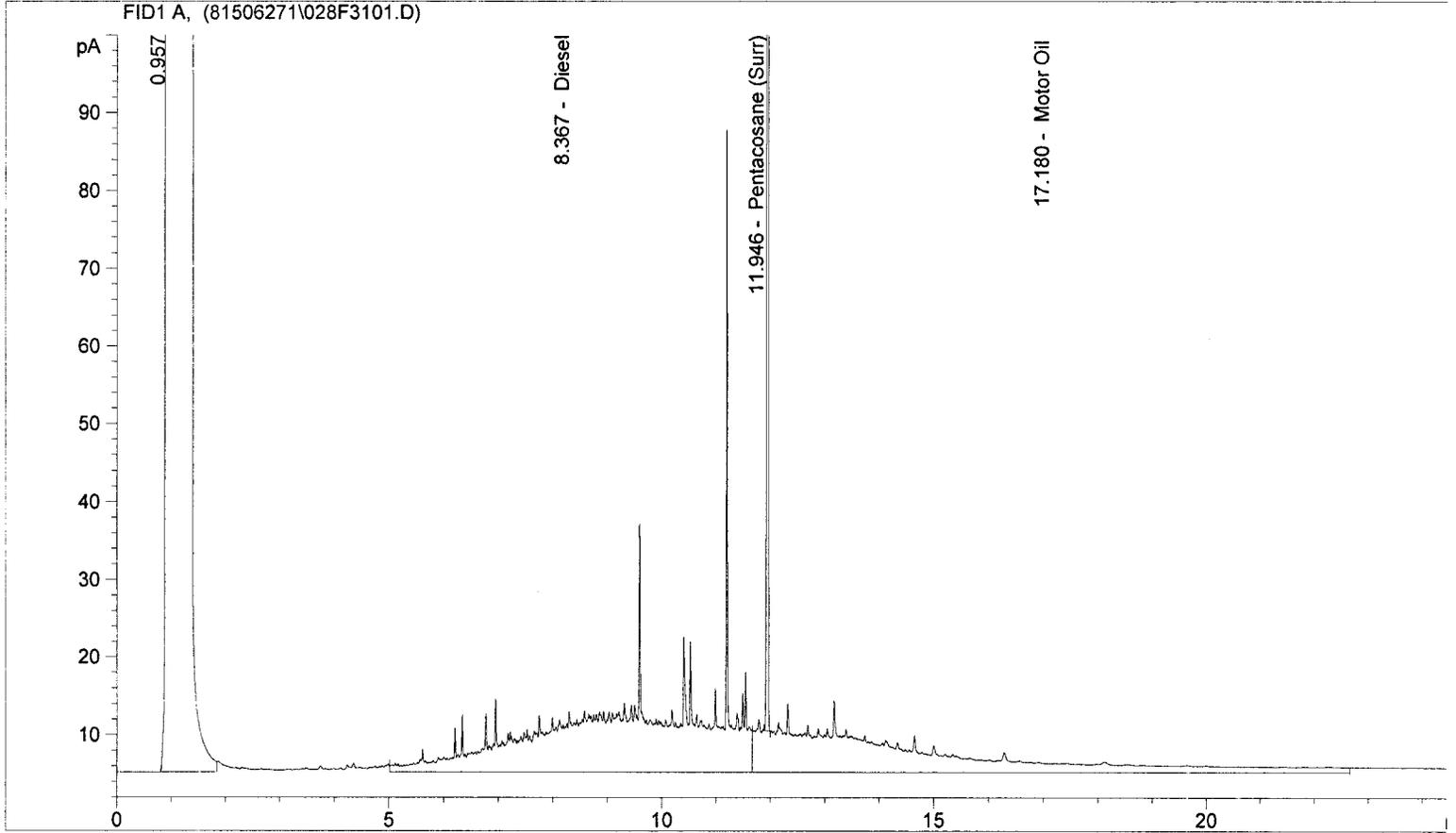
REVIEWED BY *ES*
 DATE *7/12/15*

06.30.15 ES

Sample Name: EV15060181-02 W

SGA

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.367	FID1 A,	Diesel	2075.750	179.215
11.946		Pentacosane (Surr)	1061.254	43.706
17.180		Motor Oil	1355.731	124.847

109%

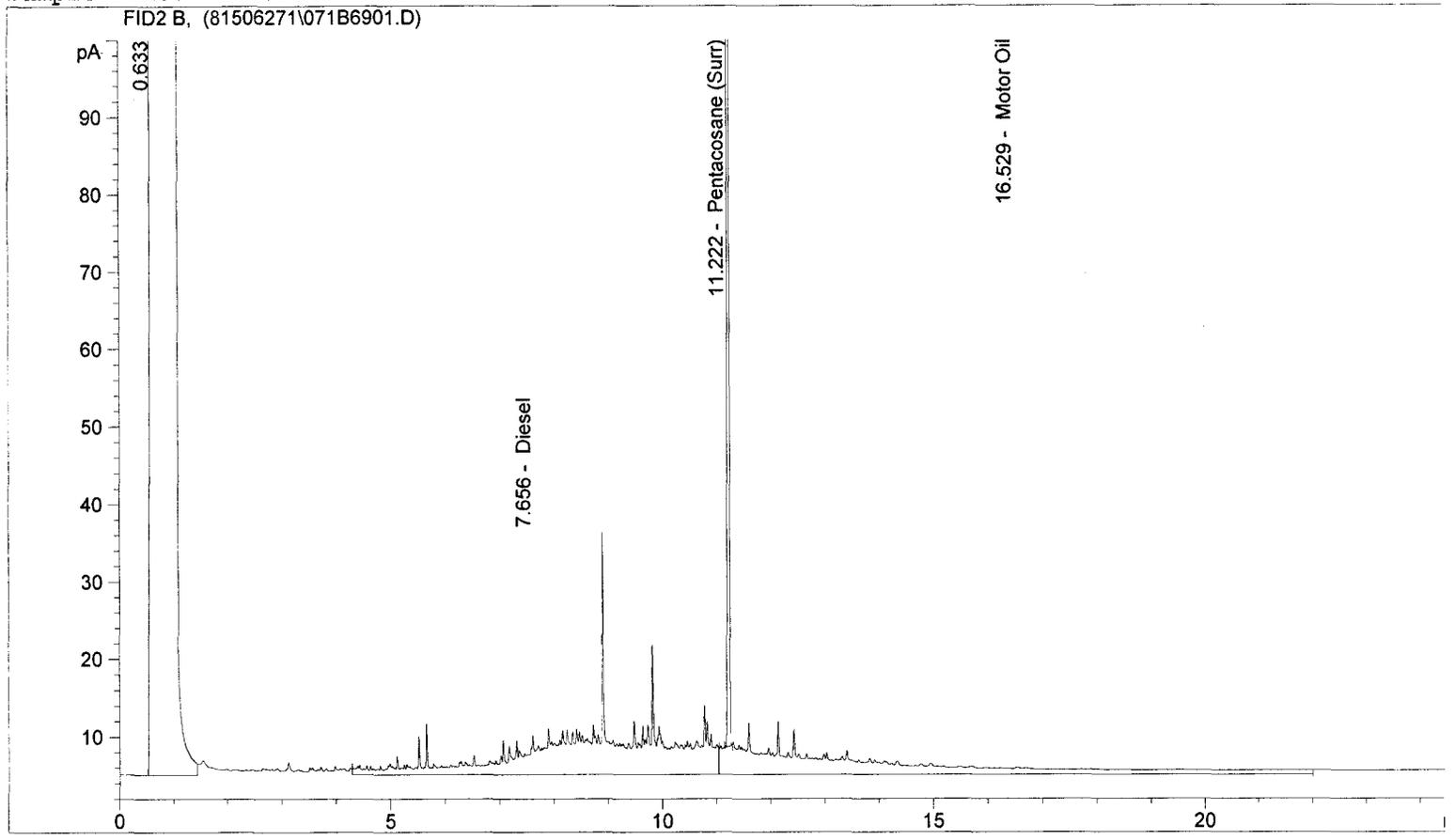
$D = 179.215 \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 360 \mu\text{g/L}$ Unidentified Diesel Range Product

$O = 124.847 \mu\text{g/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 250 \mu\text{g/L}$ Unidentified Oil Range Product

REVIEWED BY MS/
 DATE 7/12/15

06-30-15

Sample Name: EV15060181-03 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	1168.260	90.809
11.222		Pentacosane (Surr)	1172.560	41.877
16.529		Motor Oil	777.480	61.487

105%

$D = 90.809 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{500 \text{ mL}} = 180 \text{ ug/L}$ Unidentified Diesel Range Product

$0 < 250 \text{ ug/L}$

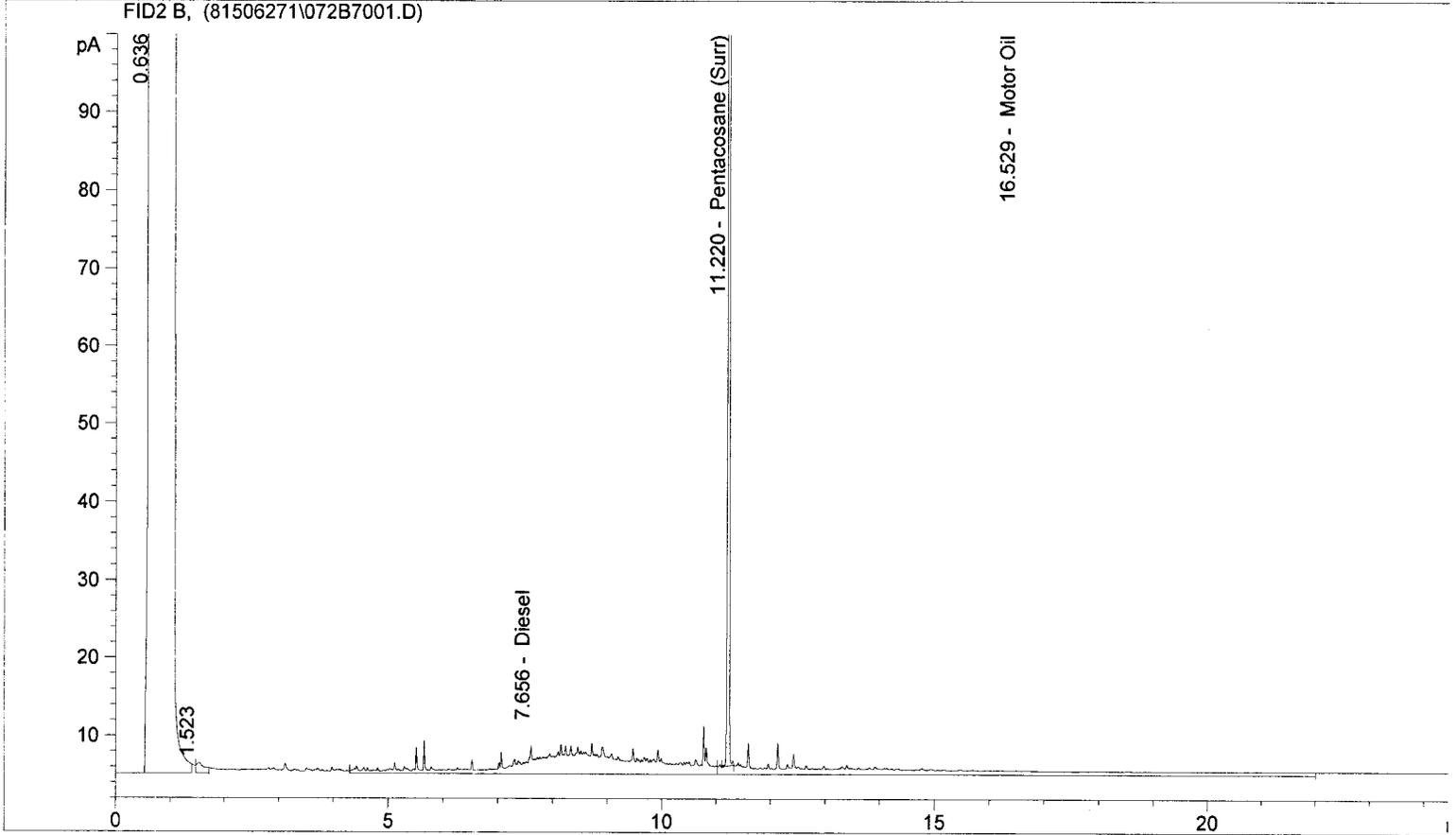
REVIEWED BY *MS*
 DATE *7/2/15*

06.30.15E

Sample Name: EV15060181-03 W

SGA

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	547.505	42.558
11.220		Pentacosane (Surr)	1032.862	36.888
16.529		Motor Oil	403.939	31.945

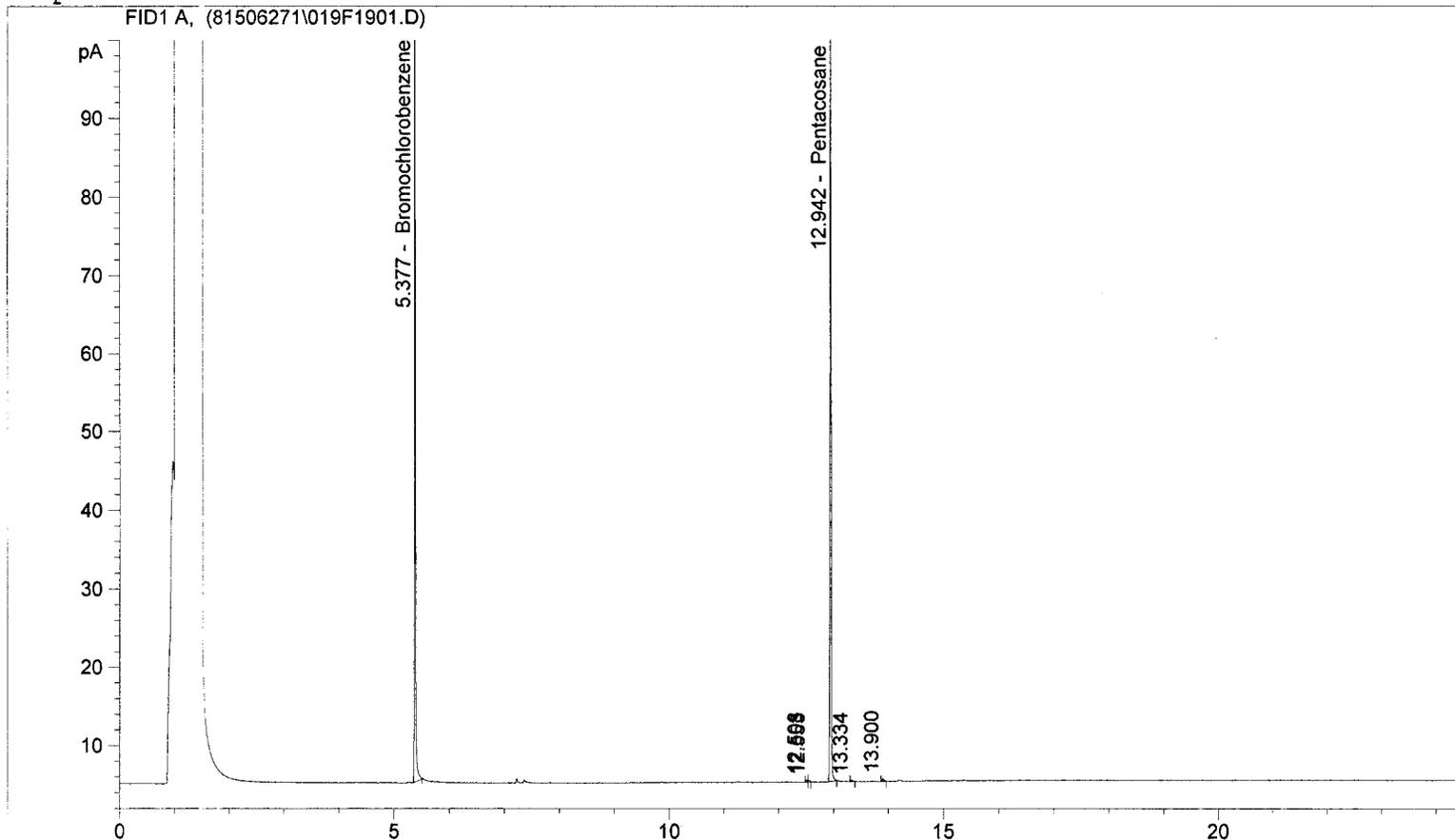
92%

< 130 mg/L
0 < 250 mg/L

REVIEWED BY *MS*
 DATE *7/2/15*

06.30.15E

Sample Name: EV15060181-04 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.377	FID1 A,	Bromochlorobenzene	120.848	20.907
12.942		Pentacosane	137.686	6.990

84/
70/

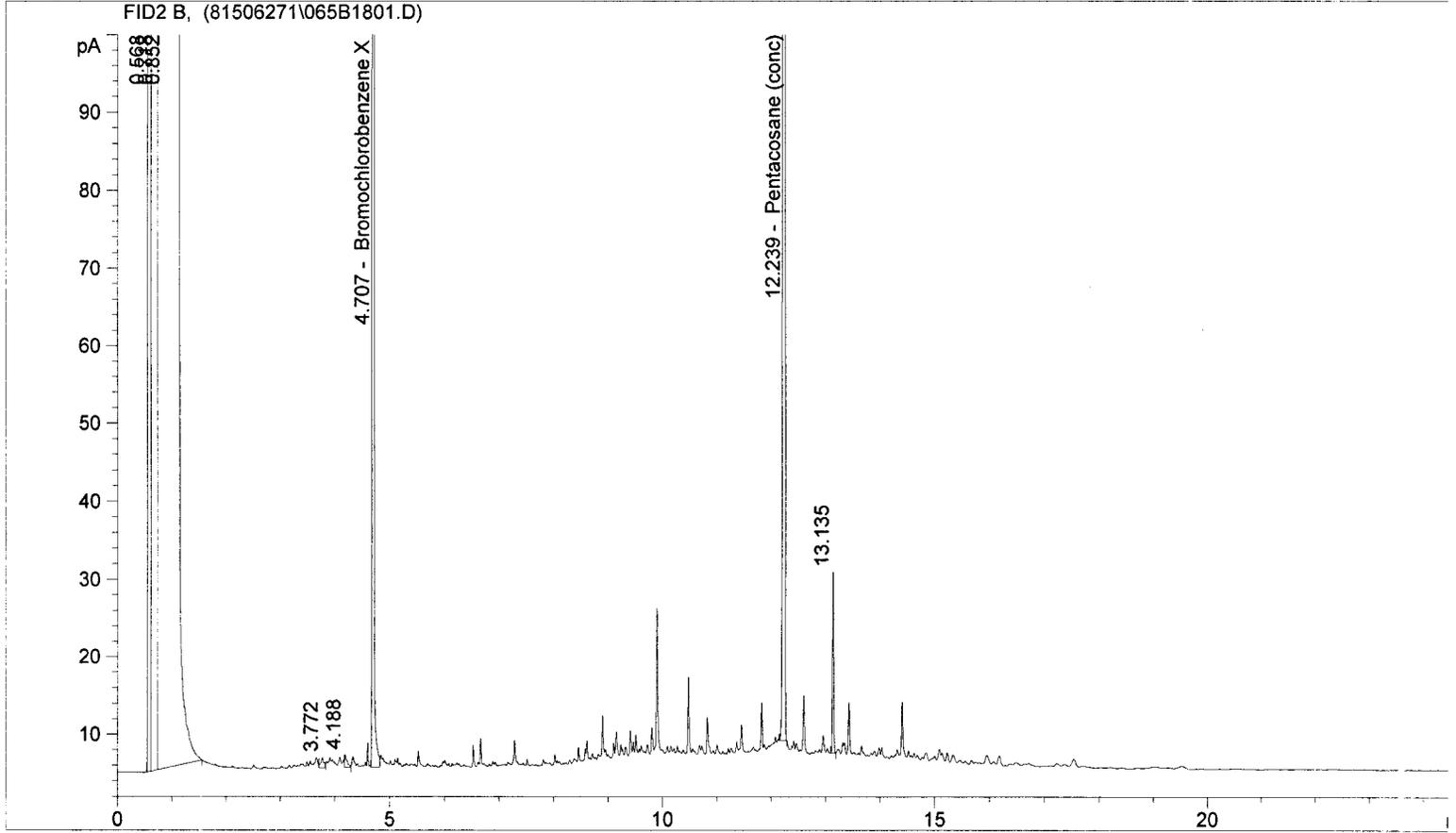
G < 130 ug/L
 D < 310 ug/L

REVIEWED BY MS
 & DATE 7/12/15

06.30.15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\065B1801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 6/27/2015 6:21:03 PM 6/27/2015 6:21:03 PM
 Report Creation: 6/29/2015 11:41:51 AM

Sample Name: EV15060181-04 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.707	FID2 B,	Bromochlorobenzene X	2587.834	201.489
12.239		Pentacosane (conc)	3029.244	78.623

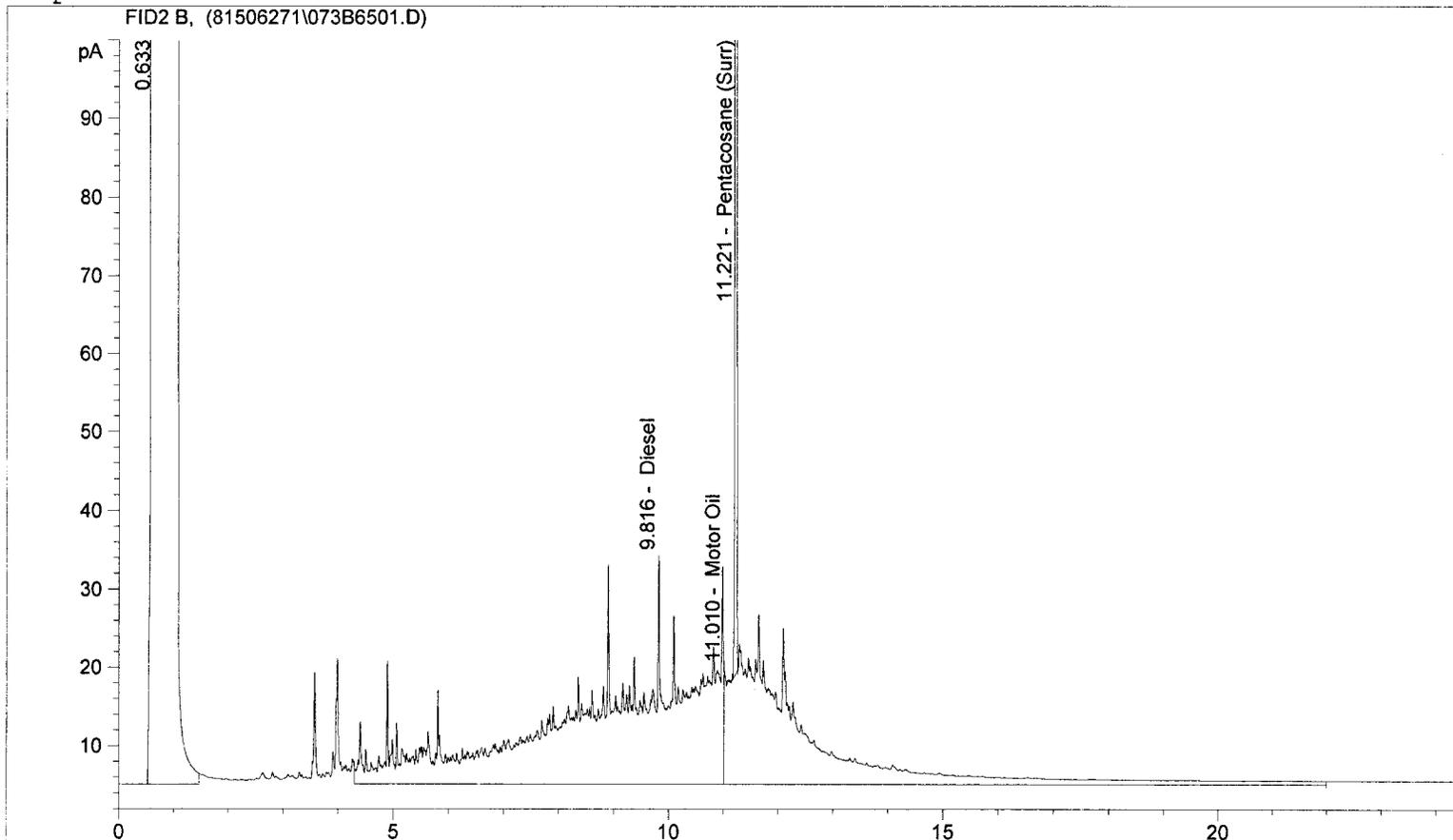
79%

0 < 310 ug/L

REVIEWED BY *MB*
 & DATE *7/2/15*

06.30.15E

Sample Name: EV15060181-05 W
 FID2 B, (81506271\073B6501.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
9.816	FID2 B,	Diesel	2903.343	225.678
11.010		Motor Oil	1761.477	139.306
11.221		Pentacosane (Surr)	1157.750	41.348

103%

$D = 225.678 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{498 \text{ mL}} = 450 \text{ ug/L}$ Unidentified Diesel Range Product
 (bias high due to Oil Range Product overlap)

$D = 139.306 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{498 \text{ mL}} = 280 \text{ ug/L}$ Unidentified Oil Range Product

RECEIVED BY
 EBS
 7/2/15

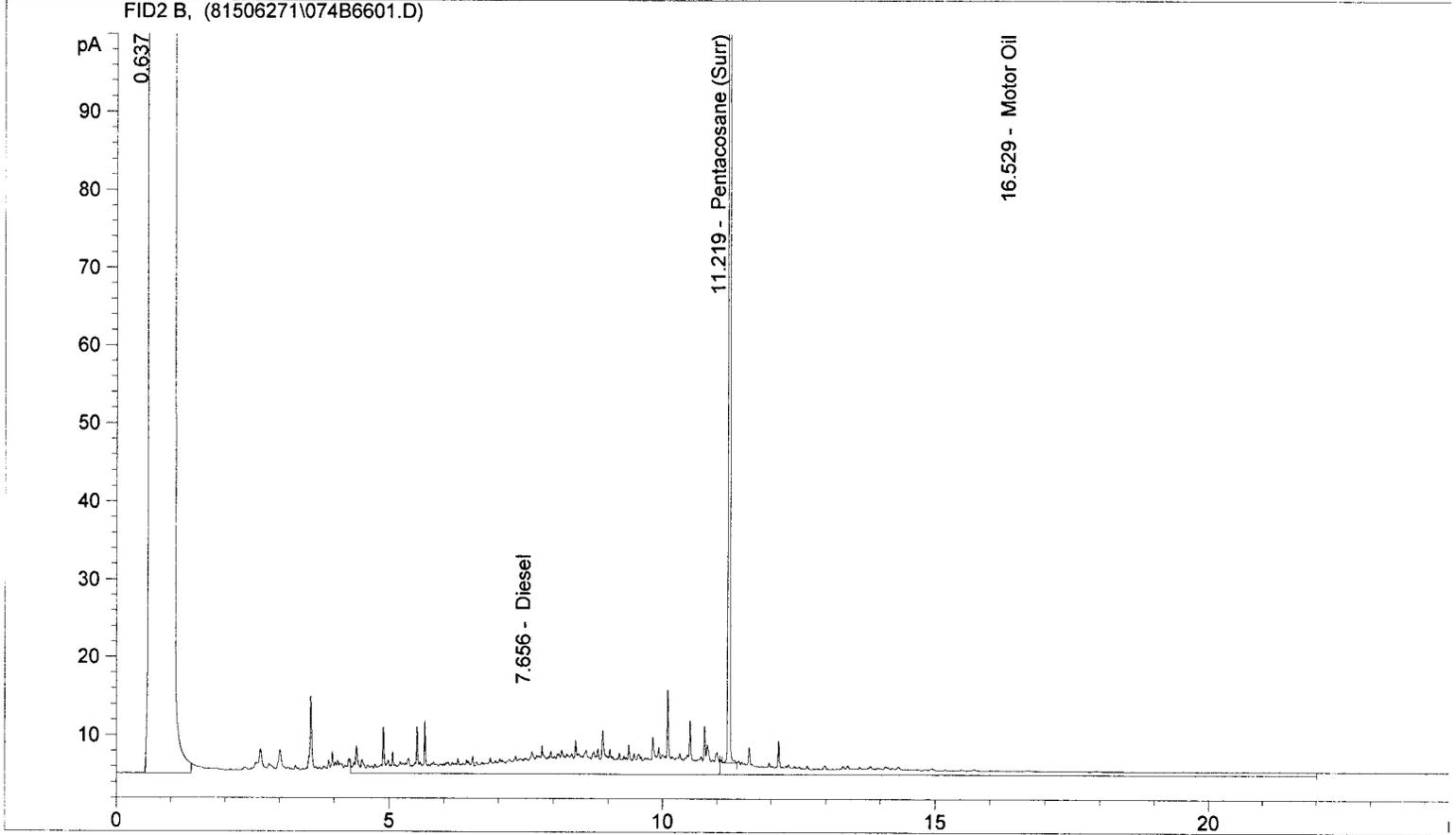
06.30.15 EBS

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\074B6601.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BDMO0315.M
 Injection Date & Time: 6/28/2015 8:31:56 PM 6/28/2015 8:31:56 PM
 Report Creation: 6/29/2015 11:35:09 AM

Sample Name: EV15060181-05 W

SGA

- >



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	770.986	59.929
11.219		Pentacosane (Surr)	961.812	34.350
16.529		Motor Oil	421.315	33.320

80%

D < 130 µg/L

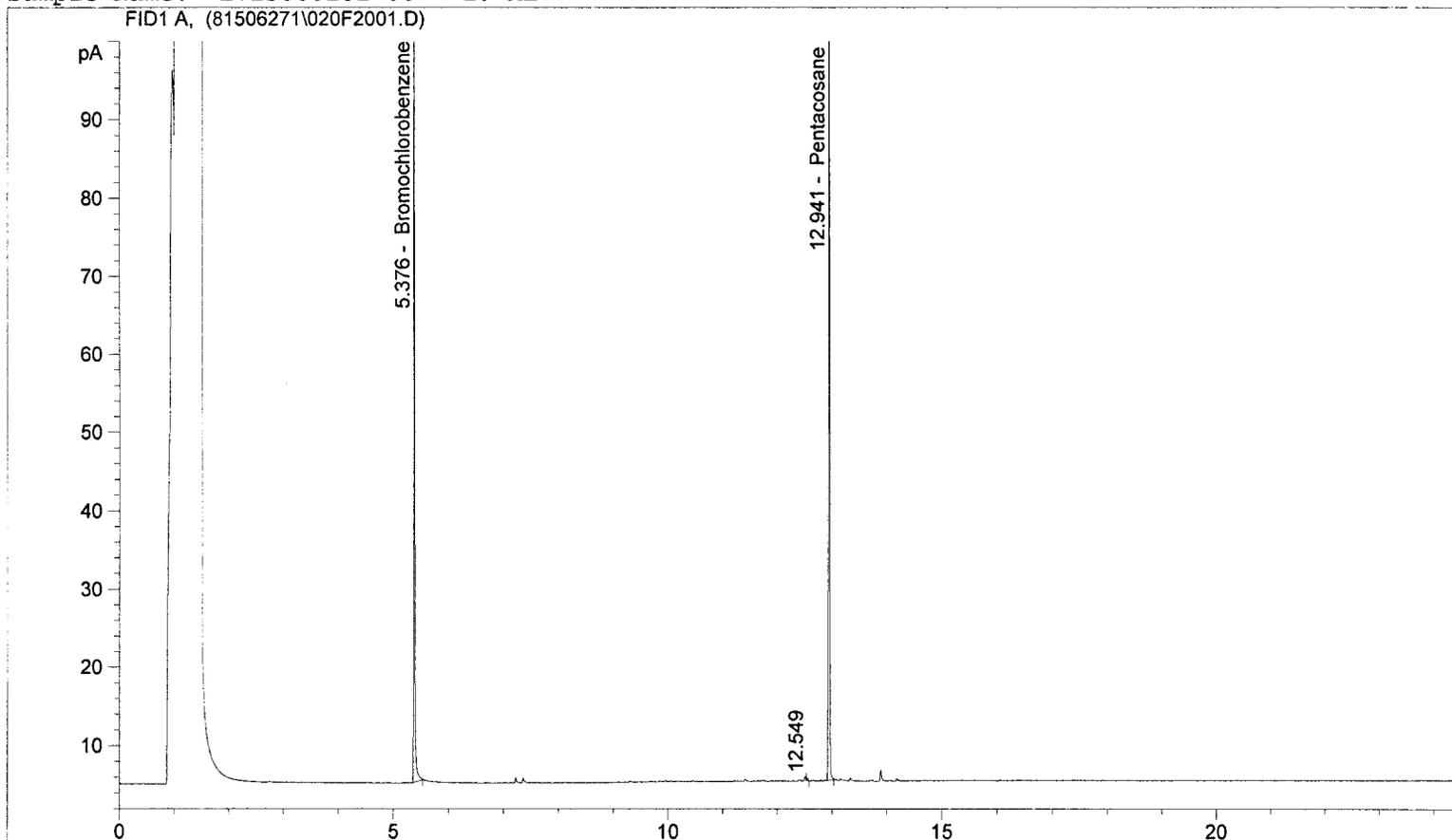
O < 250 µg/L

RECEIVED BY
 E
 MS/15
 7/2/15

EV15060181

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\020F2001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 6/27/2015 6:56:48 PM 6/27/2015 6:56:48 PM
 Report Creation: 6/29/2015 11:19:06 AM

Sample Name: EV15060181-06 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.376	FID1 A,	Bromochlorobenzene	124.533	21.545
12.941		Pentacosane	147.943	7.511

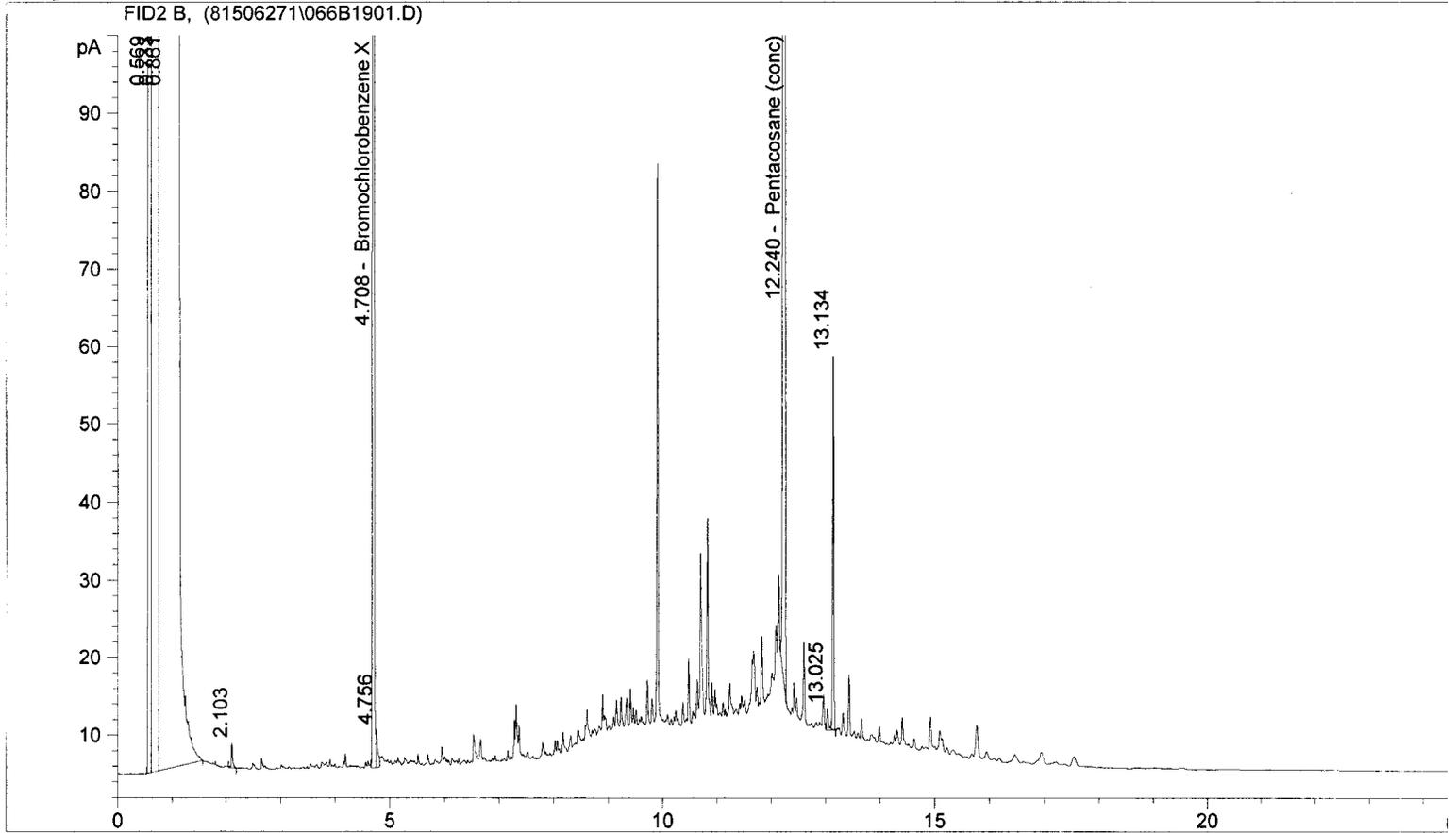
86%
75%

G < 130 µg/L
 D < 310 µg/L

REVIEWED BY *AB*
 & DATE *7/2/15*

06.30.15

Sample Name: EV15060181-06 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene X	2594.946	202.042
12.240		Pentacosane (conc)	3043.282	78.987

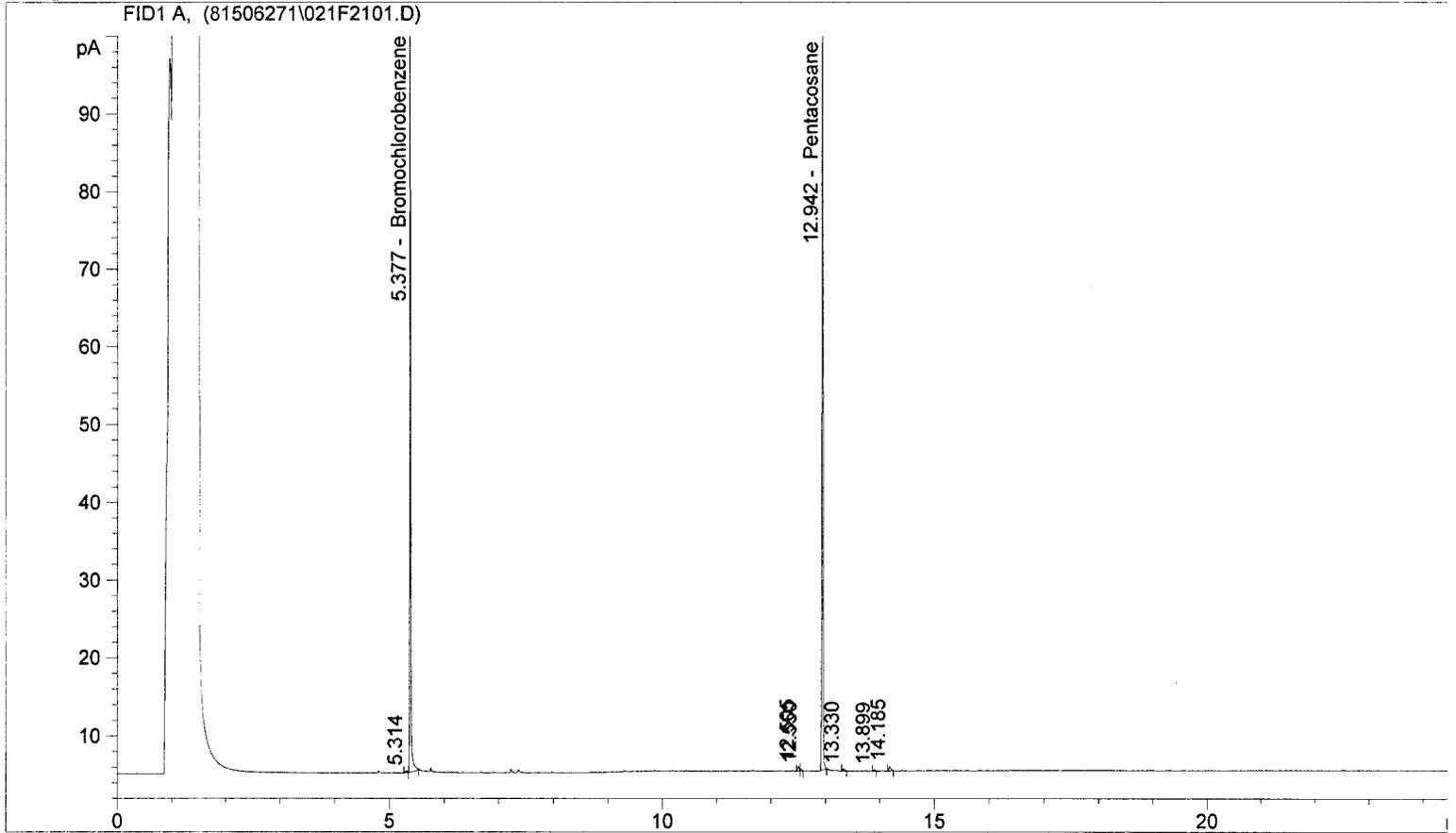
79%

0 < 310 µg/L

REVIEWED BY BS
 & DATE 7/12/15

06.30.15EI

Sample Name: EV15060181-07 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.377	FID1 A,	Bromochlorobenzene	115.638	20.006
12.942		Pentacosane	132.949	6.749

80%
67%

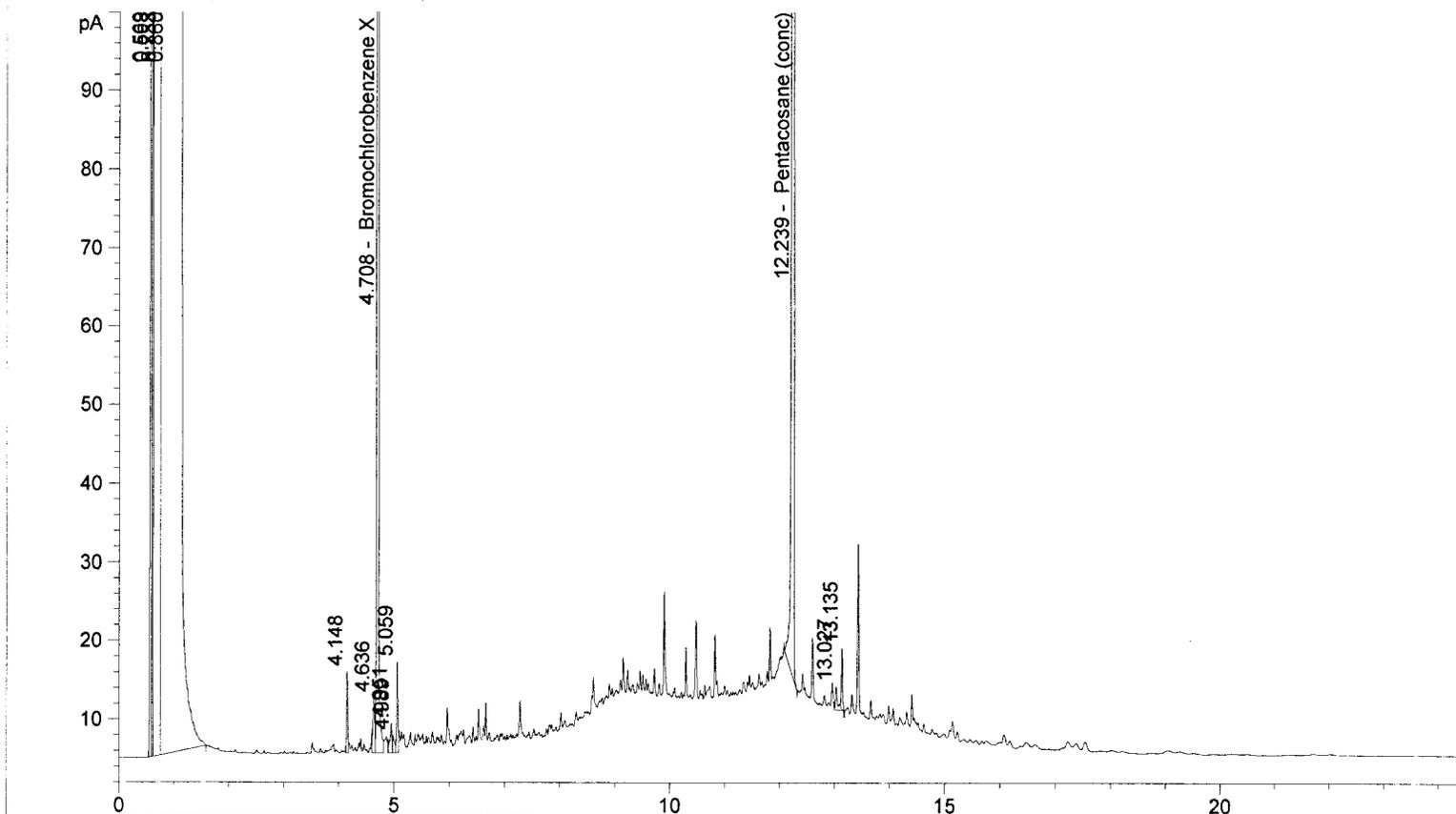
G < 130 µg/L
 D < 310 µg/L

REVIEWED BY [Signature] 7/12/15
 & DATE

06.29.15 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81506271\067B2001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 6/27/2015 7:33:10 PM 6/27/2015 7:33:10 PM
 Report Creation: 6/29/2015 11:42:31 AM

Sample Name: EV15060181-07 1 ML
 FID2 B, (81506271\067B2001.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene X	2660.752	207.166
12.239		Pentacosane (conc)	2924.668	75.908

76%

0 < 310 µg/L

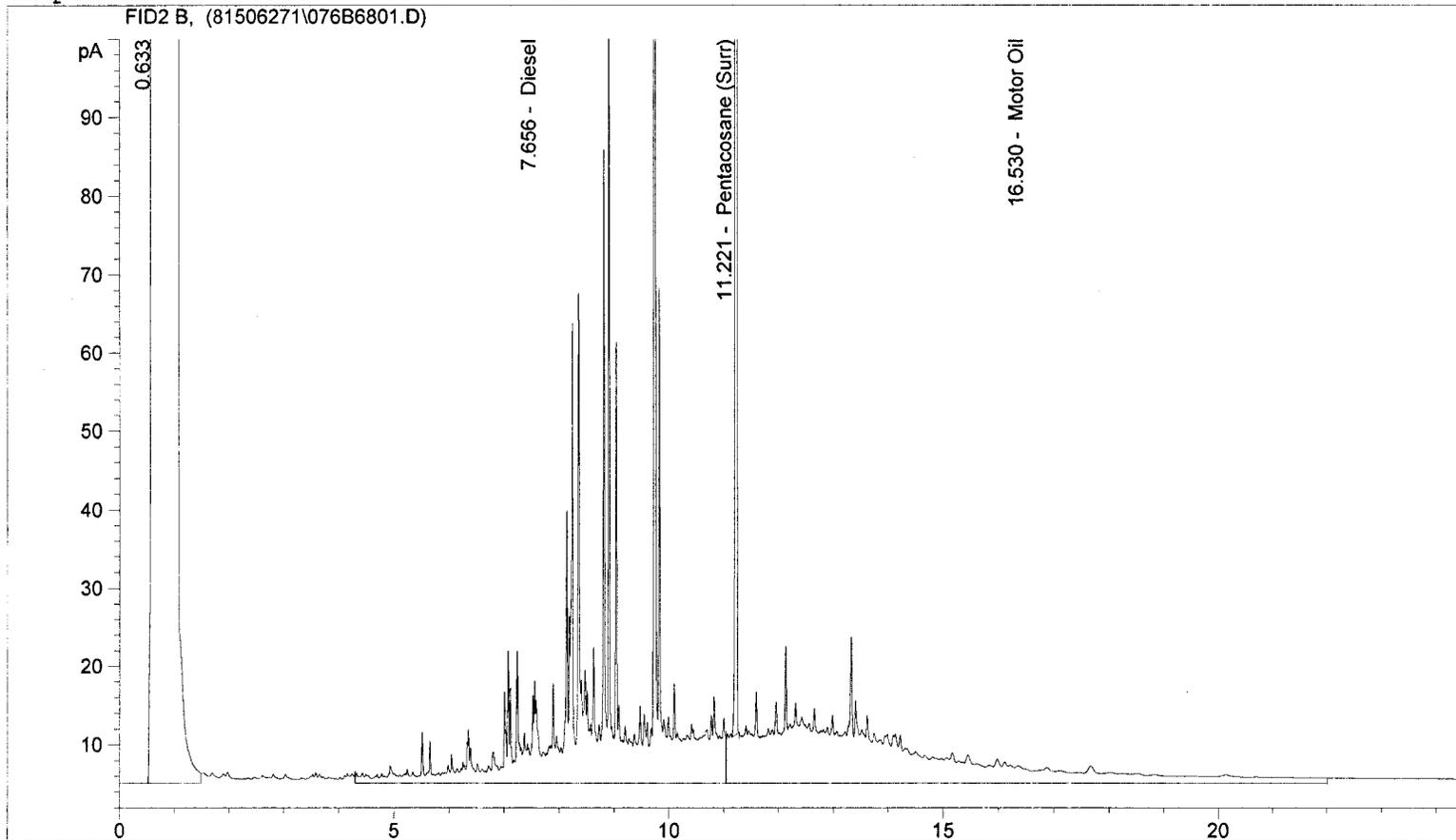
REVIEWED BY *IB*
 & DATE *7/2/15*

EV15060181-07

Sample Name: EV15060181-08 W

SGA

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	2737.050	212.752
11.221		Pentacosane (Surr)	1092.193	39.007
16.530		Motor Oil	2022.407	159.942

98%

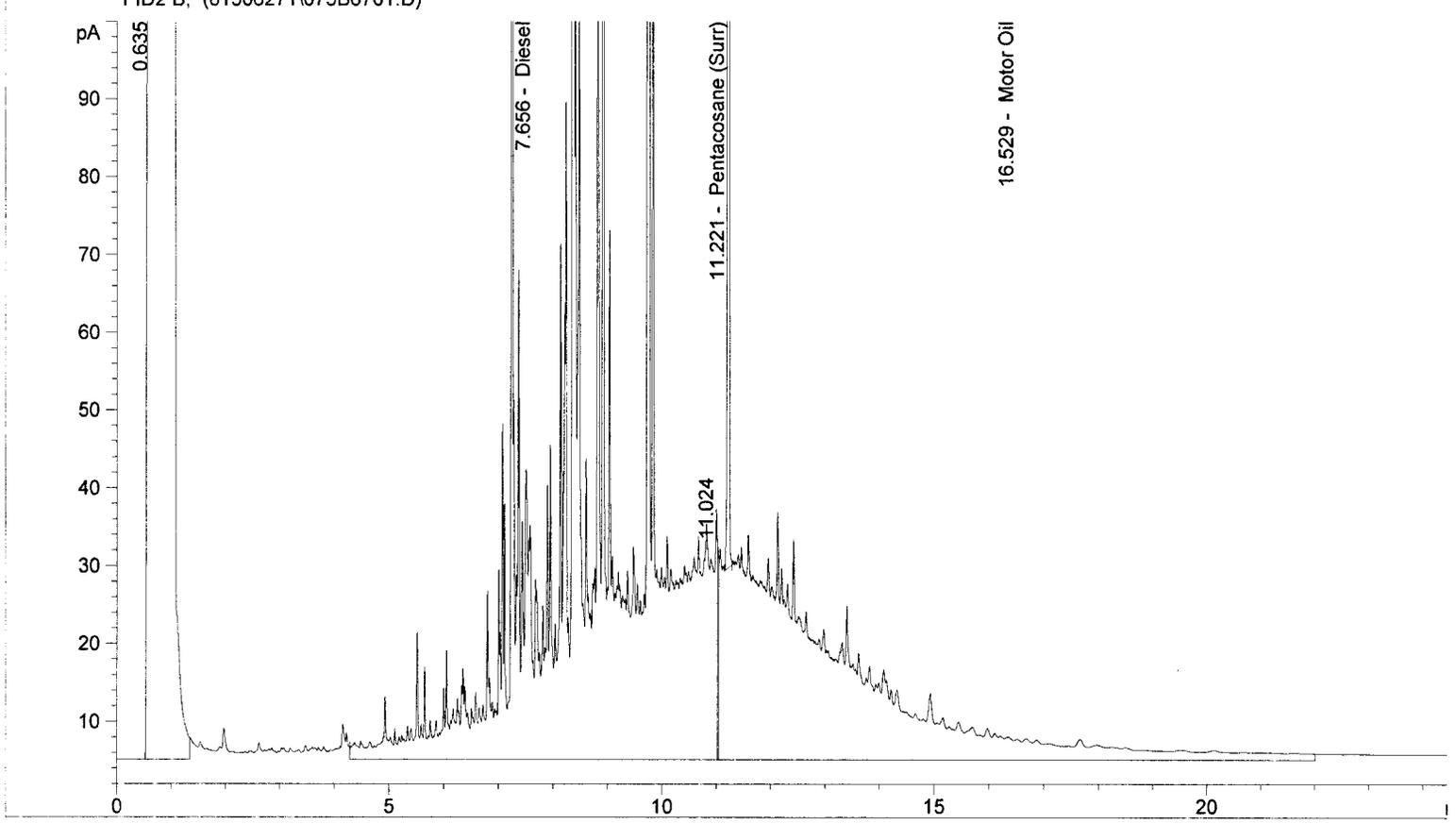
$D = 212.752 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 430 \text{ ug/L}$ Unidentified Diesel Range Product

$O = 159.942 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 320 \text{ ug/L}$ Unidentified Oil Range Product

REVIEWED BY MS
E 7/4/15

06.30.15E

Sample Name: EV15060181-08 W
 FID2 B, (81506271\075B6701.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	9233.404	717.717
11.221		Pentacosane (Surr)	1023.487	36.553
16.529		Motor Oil	4391.814	347.325

91%

$D = 717.717 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 1450 \text{ ug/L}$ Unidentified Diesel Range Product
(bias high due to Oil Range Product overlap)

$O = 347.325 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{495 \text{ mL}} = 700 \text{ ug/L}$ Unidentified Oil Range Product

RE BY *AB*
 E *7/12/15*

06-30-15 E

EV15060181

Chain-of-Custody Record

- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080

LANDAU ASSOCIATES



Date 6/25/15
Page 1 of 1

Project Name Closed Yakima LF Project No. 1418008-030-032

Project Location/Event Closed City of Yakima LF / 4th Quarter GW

Sampler's Name Stephanie Renardo, Shane Kostka, Keenan Mussie

Project Contact Jeffrey Fellows, Stephanie Renardo

Send Results To J. Fellows, A. Halvorsen, K. Schultz

Sample I.D.	Date	Time	Matrix	No. of Containers	Metals (Total? Dissolved?)	Ammonia/Total	Alkalinity/Bicarbonate	Chlorinated Hydrocarbons	TCB	VOC 2	SVOC	PAH	TPH-HCTD	TPH-G	Observations/Comments
1 MW-106-062515	6/25/15	0851	AQ	11	X	X	X	X	X	X	X	X	X	X	X
2 MW-12-062515	6/25/15	0900	AQ	11	X	X	X	X	X	X	X	X	X	X	X
3 DUP-1-062515	6/25/15	0901	AQ	11	X	X	X	X	X	X	X	X	X	X	X
4 MW-102-062515	6/25/15	1030	AQ	14	X	X	X	X	X	X	X	X	X	X	X
5 MW-101-062515	6/25/15	1035	AQ	11	X	X	X	X	X	X	X	X	X	X	X
6 MW-105-062515	6/25/15	1125	AQ	14	X	X	X	X	X	X	X	X	X	X	X
7 MW-18-062515	6/25/15	1130	AQ	14	X	X	X	X	X	X	X	X	X	X	X
8 TP-2-062515	6/25/15	1250	AQ	5	X	X	X	X	X	X	X	X	X	X	X
9 TRIP BLANKS	---	---	AQ	2											

Turnaround Time
 Standard
 Accelerated

Observations/Comments:
 X Allow water samples to settle, collect aliquot from clear portion
 NWTPH-Dx - run acid wash silica gel cleanup
 Analyze for EPH if no specific product identified
 VOC/BTEX/VPH (soil):
 ___ non-preserved
 ___ preserved w/methanol
 ___ preserved w/sodium bisulfate
 ___ Freeze upon receipt
 Dissolved metal water samples field filtered
 Other: As, Ba, Ca, Cd, Cr, Fe, K, Pb, Mg, Mn, Na, Ni, Se, Ag, Hg, I, F, NO₃, NO₂, Cl, SO₄
2 - Include N-Hexane
** - Run w/ AND w/out SG/A
O - Run w/ positive HCTD

Note: Samples for dissolved metals have been field filtered

Special Shipment/Handling or Storage Requirements ON ICE

Method of Shipment Delivery

Relinquished by	Received by
Signature <u>Keenan Mussie</u>	Signature <u>[Signature]</u>
Printed Name <u>Keenan Mussie</u>	Printed Name <u>Rick Bagnol</u>
Company <u>LANDAU</u>	Company <u>ABS</u>
Date <u>6-25-15</u> Time <u>4:50</u>	Date <u>6/25/15</u> Time <u>4:50</u>

Relinquished by: Signature, Printed Name, Company, Date, Time

Received by: Signature, Printed Name, Company, Date, Time

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV15060181

Project: Closed Yakima LF / #1148008.030.032

Received Date: 6/25/15 Received Time: 4:50 pm By: SM

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express

Were custody seals on outside of sample? Yes No N/A
If yes, how many? Where?
Custody seal date: Seal name:

Was Chain of Custody properly filled out (ink, signed, dated, etc.)? X

Did all bottles have labels? X

Did all bottle labels and tags agree with Chain of Custody? X

Were samples received within hold time? X

Did all bottles arrive in good condition (unbroken, etc.)? X

Was sufficient amount of sample sent for the tests indicated? X

Was correct preservation added to samples? X

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>

Were VOA vials checked for absence of air bubbles? X
Bubbles present in sample #: None

Temperature of cooler upon receipt: 9.2°C, 8.4°C, (Cold) Cool Ambient N/A
2.8°C, 3.4°C all on ice

Explain any discrepancies:

Was client contacted? Who was called? By whom? Date:

Outcome of call:



July 21, 2015

Mr. Jeffrey Fellows
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Fellows,

On June 26th, 7 samples were received by our laboratory and assigned our laboratory project number EV15060188. The project was identified as your Yakima Landfill / #1148008.030.032. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-01
CLIENT SAMPLE ID	MW-108-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 2:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	07/01/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	07/01/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	07/01/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-01
CLIENT SAMPLE ID	MW-108-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 2:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



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CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-01
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	UG/L	07/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	UG/L	07/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/07/2015	GAP



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CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-01
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	UG/L	07/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	0.018	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



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SAMPLE DATA RESULTS

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Endosulfan II	EPA-8081	0.011	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	220	5.0	1	MG/L	07/01/2015	DNT
Chloride	EPA-300.0	18	0.092	1	MG/L	06/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	06/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	06/30/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	07/01/2015	RAL
Arsenic	EPA-200.8	3.9	0.45	1	UG/L	07/06/2015	RAL
Barium	EPA-200.8	53	1.0	1	UG/L	07/06/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium	EPA-200.8	38000 B	100	1	UG/L	07/06/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron	EPA-200.8	31000	50	1	UG/L	07/06/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium	EPA-200.8	13000	50	1	UG/L	07/06/2015	RAL
Manganese	EPA-200.8	2100	2.0	1	UG/L	07/06/2015	RAL
Potassium	EPA-200.8	7000	50	1	UG/L	07/06/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium	EPA-200.8	16000	50	1	UG/L	07/06/2015	RAL
Arsenic (Dissolved)	EPA-200.8	5.2	0.45	1	UG/L	07/06/2015	RAL
Barium (Dissolved)	EPA-200.8	53	1.0	1	UG/L	07/06/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium (Dissolved)	EPA-200.8	37000 B	100	1	UG/L	07/06/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron (Dissolved)	EPA-200.8	31000	50	1	UG/L	07/06/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	UG/L	07/06/2015	RAL
Manganese (Dissolved)	EPA-200.8	2200	2.0	1	UG/L	07/06/2015	RAL
Potassium (Dissolved)	EPA-200.8	6900	50	1	UG/L	07/06/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-01
CLIENT SAMPLE ID	MW-108-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 2:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium (Dissolved)	EPA-200.8	16000	50	1	UG/L	07/06/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	200	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	200	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	2.6	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	5.3	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	99.1	07/01/2015	EBS
C25	NWTPH-HCID	81.9	07/01/2015	EBS
C25 (conc)	NWTPH-HCID	80.1	07/01/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	94.4	06/26/2015	CCN
Toluene-d8	EPA-8260	104	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	98.4	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	104	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	99.8	07/06/2015	GAP
2-Fluorophenol	EPA-8270	87.1	07/07/2015	GAP
Phenol-d5	EPA-8270	55.0	07/07/2015	GAP
Nitrobenzene-d5	EPA-8270	83.0	07/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	129 GS1	07/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	98.7	07/07/2015	GAP
Terphenyl-d14	EPA-8270	98.8	07/07/2015	GAP
DCB	EPA-8082	111	07/06/2015	CAS
TCMX	EPA-8081	70.0	07/08/2015	CAS
DCB	EPA-8081	80.0	07/08/2015	CAS

GS1 - Surrogate outside of control limits due to matrix effect.

U - Analyte analyzed for but not detected at level above reporting limit.

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-02
CLIENT SAMPLE ID	FPP-MW-1-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 2:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	8600	130	1	UG/L	06/29/2015	EBS
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	3000	130	1	UG/L	06/29/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	1900	250	1	UG/L	06/29/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	470	250	1	UG/L	06/29/2015	EBS
Naphthalene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0093	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Total Dissolved Solids	SM2540C	590	5.0	1	MG/L	07/01/2015	DNT
Chloride	EPA-300.0	90	0.92	10	MG/L	06/26/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	DNT
Sulfate	EPA-300.0	2.7	0.26	1	MG/L	06/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	06/30/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	07/01/2015	RAL
Arsenic	EPA-200.8	2.8	0.45	1	UG/L	07/06/2015	RAL
Barium	EPA-200.8	130	1.0	1	UG/L	07/06/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium	EPA-200.8	89000 B	100	1	UG/L	07/06/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron	EPA-200.8	57000	50	1	UG/L	07/06/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium	EPA-200.8	27000	50	1	UG/L	07/06/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-02
CLIENT SAMPLE ID	FPP-MW-1-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 2:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Manganese	EPA-200.8	5800	10	5	UG/L	07/09/2015	RAL
Potassium	EPA-200.8	8700	50	1	UG/L	07/06/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium	EPA-200.8	68000	50	1	UG/L	07/06/2015	RAL
Arsenic (Dissolved)	EPA-200.8	4.1	0.45	1	UG/L	07/06/2015	RAL
Barium (Dissolved)	EPA-200.8	120	1.0	1	UG/L	07/06/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium (Dissolved)	EPA-200.8	81000 B	100	1	UG/L	07/06/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron (Dissolved)	EPA-200.8	53000	50	1	UG/L	07/06/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium (Dissolved)	EPA-200.8	25000	50	1	UG/L	07/06/2015	RAL
Manganese (Dissolved)	EPA-200.8	5300	10	5	UG/L	07/09/2015	RAL
Potassium (Dissolved)	EPA-200.8	7900	50	1	UG/L	07/06/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium (Dissolved)	EPA-200.8	62000	50	1	UG/L	07/06/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	440	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	440	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	3.6	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	28	10	20	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	101	06/29/2015	EBS
C25	NWTPH-DX w/ SGA	86.6	06/29/2015	EBS
2,4,6-Tribromophenol	EPA-8270 SIM	121	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	84.7	07/06/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
 B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.
 Oil range product results biased high due to diesel range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-03
CLIENT SAMPLE ID	MW-107-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 3:41:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	07/01/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	07/01/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	07/01/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-03
CLIENT SAMPLE ID	MW-107-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 3:41:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0090	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	0.011	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-03
CLIENT SAMPLE ID	MW-107-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 3:41:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.87	1	UG/L	07/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.83	1	UG/L	07/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-03
CLIENT SAMPLE ID	MW-107-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 3:41:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.72	1	UG/L	07/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	0.017	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
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CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-03
CLIENT SAMPLE ID	MW-107-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 3:41:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	0.019	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	240	5.0	1	MG/L	07/01/2015	DNT
Chloride	EPA-300.0	19	0.092	1	MG/L	06/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	06/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	06/30/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	07/01/2015	RAL
Arsenic	EPA-200.8	3.5	0.45	1	UG/L	07/06/2015	RAL
Barium	EPA-200.8	57	1.0	1	UG/L	07/06/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium	EPA-200.8	36000 B	100	1	UG/L	07/06/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron	EPA-200.8	23000	50	1	UG/L	07/06/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium	EPA-200.8	13000	50	1	UG/L	07/06/2015	RAL
Manganese	EPA-200.8	2100	2.0	1	UG/L	07/06/2015	RAL
Potassium	EPA-200.8	6900	50	1	UG/L	07/06/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium	EPA-200.8	19000	50	1	UG/L	07/06/2015	RAL
Arsenic (Dissolved)	EPA-200.8	4.1	0.45	1	UG/L	07/06/2015	RAL
Barium (Dissolved)	EPA-200.8	56	1.0	1	UG/L	07/06/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium (Dissolved)	EPA-200.8	35000 B	100	1	UG/L	07/06/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron (Dissolved)	EPA-200.8	22000	50	1	UG/L	07/06/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium (Dissolved)	EPA-200.8	12000	50	1	UG/L	07/06/2015	RAL
Manganese (Dissolved)	EPA-200.8	2000	2.0	1	UG/L	07/06/2015	RAL
Potassium (Dissolved)	EPA-200.8	6700	50	1	UG/L	07/06/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-03
CLIENT SAMPLE ID	MW-107-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 3:41:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium (Dissolved)	EPA-200.8	18000	50	1	UG/L	07/06/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	200	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	200	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	3.3	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	3.8	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	80.7	07/01/2015	EBS
C25	NWTPH-HCID	69.5	07/01/2015	EBS
C25 (conc)	NWTPH-HCID	79.8	07/01/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	95.1	06/26/2015	CCN
Toluene-d8	EPA-8260	103	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	97.0	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	112	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	102	07/06/2015	GAP
2-Fluorophenol	EPA-8270	94.8	07/07/2015	GAP
Phenol-d5	EPA-8270	59.3	07/07/2015	GAP
Nitrobenzene-d5	EPA-8270	89.8	07/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	150 GS1	07/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	106	07/07/2015	GAP
Terphenyl-d14	EPA-8270	106	07/07/2015	GAP
DCB	EPA-8082	111	07/06/2015	CAS
TCMX	EPA-8081	71.0	07/08/2015	CAS
DCB	EPA-8081	85.0	07/08/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.
 B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 GS1 - Surrogate outside of control limits due to matrix effect.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-04
CLIENT SAMPLE ID	MW-103-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 4:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	07/01/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	07/01/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	07/01/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

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CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-04
CLIENT SAMPLE ID	MW-103-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 4:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0093	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

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CLIENT SAMPLE ID	MW-103-062515	DATE RECEIVED:	06/26/2015
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SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0094	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0069	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.89	1	UG/L	07/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.85	1	UG/L	07/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-04
CLIENT SAMPLE ID	MW-103-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 4:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.74	1	UG/L	07/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Azobenzene	EPA-8270	U	1.6	1	UG/L	07/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.77	1	UG/L	07/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
PCB-1016	EPA-8082	U	0.0052	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.011	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	0.0071	0.0052	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0052	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0052	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0052	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0052	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
4,4'-DDD	EPA-8081	0.084	0.011	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

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CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-04
CLIENT SAMPLE ID	MW-103-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 4:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	0.039	0.011	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.011	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.52	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	240	5.0	1	MG/L	07/01/2015	DNT
Chloride	EPA-300.0	19	0.092	1	MG/L	06/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	06/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	06/30/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	07/01/2015	RAL
Arsenic	EPA-200.8	6.6	0.45	1	UG/L	07/06/2015	RAL
Barium	EPA-200.8	52	1.0	1	UG/L	07/06/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium	EPA-200.8	39000 B	100	1	UG/L	07/06/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron	EPA-200.8	26000	50	1	UG/L	07/06/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium	EPA-200.8	14000	50	1	UG/L	07/06/2015	RAL
Manganese	EPA-200.8	2900	10	5	UG/L	07/09/2015	RAL
Potassium	EPA-200.8	5400	50	1	UG/L	07/06/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium	EPA-200.8	22000	50	1	UG/L	07/06/2015	RAL
Arsenic (Dissolved)	EPA-200.8	6.1	0.45	1	UG/L	07/06/2015	RAL
Barium (Dissolved)	EPA-200.8	52	1.0	1	UG/L	07/06/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium (Dissolved)	EPA-200.8	40000 B	100	1	UG/L	07/06/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron (Dissolved)	EPA-200.8	26000	50	1	UG/L	07/06/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium (Dissolved)	EPA-200.8	14000	50	1	UG/L	07/06/2015	RAL
Manganese (Dissolved)	EPA-200.8	2900	10	5	UG/L	07/09/2015	RAL
Potassium (Dissolved)	EPA-200.8	5500	50	1	UG/L	07/06/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-04
CLIENT SAMPLE ID	MW-103-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 4:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium (Dissolved)	EPA-200.8	22000	50	1	UG/L	07/06/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	220	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	220	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	2.0	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.9	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	82.2	07/01/2015	EBS
C25	NWTPH-HCID	71.4	07/01/2015	EBS
C25 (conc)	NWTPH-HCID	76.2	07/01/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	95.8	06/26/2015	CCN
Toluene-d8	EPA-8260	103	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.6	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	104	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	92.2	07/06/2015	GAP
2-Fluorophenol	EPA-8270	97.2	07/07/2015	GAP
Phenol-d5	EPA-8270	60.7	07/07/2015	GAP
Nitrobenzene-d5	EPA-8270	92.8	07/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	156 GS1	07/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	109	07/07/2015	GAP
Terphenyl-d14	EPA-8270	107	07/07/2015	GAP
DCB	EPA-8082	111	07/06/2015	CAS
TCMX	EPA-8081	67.0	07/08/2015	CAS
DCB	EPA-8081	78.0	07/08/2015	CAS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 GS1 - Surrogate outside of control limits due to matrix effect.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-05
CLIENT SAMPLE ID	MW-8-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 4:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	07/01/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	07/01/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	07/01/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-05
CLIENT SAMPLE ID	MW-8-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 4:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0091	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-05
CLIENT SAMPLE ID	MW-8-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 4:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.88	1	UG/L	07/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.84	1	UG/L	07/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/07/2015	GAP



CERTIFICATE OF ANALYSIS

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CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-05
CLIENT SAMPLE ID	MW-8-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 4:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	0.020	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-05
CLIENT SAMPLE ID	MW-8-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 4:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	240	5.0	1	MG/L	07/01/2015	DNT
Chloride	EPA-300.0	16	0.92	10	MG/L	07/08/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/27/2015	DNT
Nitrate as N	EPA-300.0	0.047	0.034	1	MG/L	06/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	06/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	06/30/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	07/01/2015	RAL
Arsenic	EPA-200.8	3.3	0.45	1	UG/L	07/06/2015	RAL
Barium	EPA-200.8	54	1.0	1	UG/L	07/06/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium	EPA-200.8	33000 B	100	1	UG/L	07/06/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron	EPA-200.8	23000	50	1	UG/L	07/06/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium	EPA-200.8	13000	50	1	UG/L	07/06/2015	RAL
Manganese	EPA-200.8	1800	2.0	1	UG/L	07/06/2015	RAL
Potassium	EPA-200.8	7700	50	1	UG/L	07/06/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium	EPA-200.8	20000	50	1	UG/L	07/06/2015	RAL
Arsenic (Dissolved)	EPA-200.8	4.1	0.45	1	UG/L	07/06/2015	RAL
Barium (Dissolved)	EPA-200.8	54	1.0	1	UG/L	07/06/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium (Dissolved)	EPA-200.8	33000 B	100	1	UG/L	07/06/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron (Dissolved)	EPA-200.8	24000	50	1	UG/L	07/06/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium (Dissolved)	EPA-200.8	13000	50	1	UG/L	07/06/2015	RAL
Manganese (Dissolved)	EPA-200.8	1800	2.0	1	UG/L	07/06/2015	RAL
Potassium (Dissolved)	EPA-200.8	8000	50	1	UG/L	07/06/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-05
CLIENT SAMPLE ID	MW-8-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 4:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium (Dissolved)	EPA-200.8	20000	50	1	UG/L	07/06/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	200	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	200	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	4.4	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	4.3	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	91.1	07/01/2015	EBS
C25	NWTPH-HCID	76.4	07/01/2015	EBS
C25 (conc)	NWTPH-HCID	80.2	07/01/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	96.5	06/26/2015	CCN
Toluene-d8	EPA-8260	102	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	98.5	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	74.0	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	56.4	07/06/2015	GAP
2-Fluorophenol	EPA-8270	53.2	07/07/2015	GAP
Phenol-d5	EPA-8270	32.1	07/07/2015	GAP
Nitrobenzene-d5	EPA-8270	50.9 GS1	07/07/2015	GAP
2-Fluorobiphenyl	EPA-8270	95.5	07/07/2015	GAP
2,4,6-Tribromophenol	EPA-8270	63.0	07/07/2015	GAP
Terphenyl-d14	EPA-8270	62.1	07/07/2015	GAP
DCB	EPA-8082	119	07/06/2015	CAS
TCMX	EPA-8081	71.0	07/08/2015	CAS
DCB	EPA-8081	84.0	07/08/2015	CAS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 GS1 - Surrogate outside of control limits due to matrix effect.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-06
CLIENT SAMPLE ID	MW-7-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 5:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	07/01/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	07/01/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	07/01/2015	EBS
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-06
CLIENT SAMPLE ID	MW-7-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 5:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Naphthalene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0091	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.12	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.01	1	UG/L	07/06/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-06
CLIENT SAMPLE ID	MW-7-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 5:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluoranthene	EPA-8270 SIM	U	0.0092	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.017	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0068	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.013	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.027	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Pyridine	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.4	1	UG/L	07/09/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.88	1	UG/L	07/09/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	1.9	1	UG/L	07/09/2015	GAP
Hexachloroethane	EPA-8270	U	1.9	1	UG/L	07/09/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/09/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
4-Chloroaniline	EPA-8270	U	1.8	1	UG/L	07/09/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.84	1	UG/L	07/09/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.7	1	UG/L	07/09/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-06
CLIENT SAMPLE ID	MW-7-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 5:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/09/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/09/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.73	1	UG/L	07/09/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Azobenzene	EPA-8270	U	1.5	1	UG/L	07/09/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	1.9	1	UG/L	07/09/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.75	1	UG/L	07/09/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/09/2015	GAP
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	0.0097	0.0050	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-06
CLIENT SAMPLE ID	MW-7-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 5:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
Total Dissolved Solids	SM2540C	170	5.0	1	MG/L	07/01/2015	DNT
Chloride	EPA-300.0	14	0.092	1	MG/L	06/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/27/2015	DNT
Nitrate as N	EPA-300.0	0.061	0.034	1	MG/L	06/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	DNT
Sulfate	EPA-300.0	1.1	0.26	1	MG/L	06/27/2015	DNT
Mercury	EPA-7470	U	0.11	1	UG/L	06/30/2015	RAL
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	07/01/2015	RAL
Arsenic	EPA-200.8	1.4	0.45	1	UG/L	07/06/2015	RAL
Barium	EPA-200.8	34	1.0	1	UG/L	07/06/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium	EPA-200.8	29000 B	100	1	UG/L	07/06/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron	EPA-200.8	11000	50	1	UG/L	07/06/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium	EPA-200.8	10000	50	1	UG/L	07/06/2015	RAL
Manganese	EPA-200.8	1300	2.0	1	UG/L	07/06/2015	RAL
Potassium	EPA-200.8	7900	50	1	UG/L	07/06/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium	EPA-200.8	15000	50	1	UG/L	07/06/2015	RAL
Arsenic (Dissolved)	EPA-200.8	1.8	0.45	1	UG/L	07/06/2015	RAL
Barium (Dissolved)	EPA-200.8	33	1.0	1	UG/L	07/06/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium (Dissolved)	EPA-200.8	29000 B	100	1	UG/L	07/06/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron (Dissolved)	EPA-200.8	11000	50	1	UG/L	07/06/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium (Dissolved)	EPA-200.8	10000	50	1	UG/L	07/06/2015	RAL
Manganese (Dissolved)	EPA-200.8	1400	2.0	1	UG/L	07/06/2015	RAL
Potassium (Dissolved)	EPA-200.8	7800	50	1	UG/L	07/06/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-06
CLIENT SAMPLE ID	MW-7-062515	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015 5:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium (Dissolved)	EPA-200.8	14000	50	1	UG/L	07/06/2015	RAL
Alkalinity as CaCO3, Total	SM2320B	170	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	170	15	1	MG/L	07/07/2015	CAS
Ammonia as N	EPA-350.1	2.9	0.050	1	MG/L	07/09/2015	CAS
Total Organic Carbon (TOC)	SM5310C	3.8	0.50	1	MG/L	07/01/2015	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
BCB	NWTPH-HCID	93.3	07/01/2015	EBS
C25	NWTPH-HCID	73.5	07/01/2015	EBS
C25 (conc)	NWTPH-HCID	77.6	07/01/2015	EBS
1,2-Dichloroethane-d4	EPA-8260	97.5	06/26/2015	CCN
Toluene-d8	EPA-8260	103	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	99.5	06/26/2015	CCN
2,4,6-Tribromophenol	EPA-8270 SIM	67.8	07/06/2015	GAP
Terphenyl-d14	EPA-8270 SIM	51.5	07/06/2015	GAP
2-Fluorophenol	EPA-8270	46.8	07/09/2015	GAP
Phenol-d5	EPA-8270	28.5	07/09/2015	GAP
Nitrobenzene-d5	EPA-8270	41.9 GS1	07/09/2015	GAP
2-Fluorobiphenyl	EPA-8270	82.2	07/09/2015	GAP
2,4,6-Tribromophenol	EPA-8270	51.7	07/09/2015	GAP
Terphenyl-d14	EPA-8270	55.3 GS1	07/09/2015	GAP
DCB	EPA-8082	115	07/06/2015	CAS
TCMX	EPA-8081	69.0	07/08/2015	CAS
DCB	EPA-8081	82.0	07/08/2015	CAS

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.
 GS1 - Surrogate outside of control limits due to matrix effect.
 U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-07
CLIENT SAMPLE ID	TRIP BLANKS	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN
1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS JOB#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	ALS SAMPLE#:	EV15060188-07
CLIENT SAMPLE ID	TRIP BLANKS	DATE RECEIVED:	06/26/2015
		COLLECTION DATE:	6/25/2015
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	102	06/26/2015	CCN
Toluene-d8	EPA-8260	101	06/26/2015	CCN
4-Bromofluorobenzene	EPA-8260	98.6	06/26/2015	CCN

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15060188
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY BLANK RESULTS

MB-062615W - Batch 94803 - Water by NWTPH-HCID

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
HCID-Gas Range (C7-C12)	NWTPH-HCID	U	130	1	UG/L	06/27/2015	EBS
HCID-Diesel Range (C12-C24)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS
HCID-Oil Range (C24-C40)	NWTPH-HCID	U	310	1	UG/L	06/27/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062615W - Batch 94804 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	130	1	UG/L	06/28/2015	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	250	1	UG/L	06/28/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062515W - Batch 94687 - Water by EPA-8260 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Vinyl Chloride	EPA-8260 SIM	U	0.031	1	UG/L	06/26/2015	CCN
Carbon Tetrachloride	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Chloroform	EPA-8260 SIM	U	0.14	1	UG/L	06/26/2015	CCN
Trichloroethene	EPA-8260 SIM	U	0.054	1	UG/L	06/26/2015	CCN
1,2-Dichloropropane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Trans-1,3-Dichloropropene	EPA-8260 SIM	U	0.058	1	UG/L	06/26/2015	CCN
1,1,2-Trichloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
Dibromochloromethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,1,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,1,2,2-Tetrachloroethane	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN
1,2,4-Trichlorobenzene	EPA-8260 SIM	U	0.10	1	UG/L	06/26/2015	CCN

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062515W - Batch 94687 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Chloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Acetone	EPA-8260	U	25	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-062515W - Batch 94687 - Water by EPA-8260

1,1-Dichloroethene	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Methylene Chloride	EPA-8260	U	0.68	1	UG/L	06/26/2015	CCN
Acrylonitrile	EPA-8260	U	0.057	1	UG/L	06/26/2015	CCN
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Butanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Hexane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichloroethane	EPA-8260	U	0.014	1	UG/L	06/26/2015	CCN
Benzene	EPA-8260	U	0.028	1	UG/L	06/26/2015	CCN
Dibromomethane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromodichloromethane	EPA-8260	U	0.059	1	UG/L	06/26/2015	CCN
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
Toluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Hexanone	EPA-8260	U	10	1	UG/L	06/26/2015	CCN
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Tetrachloroethylene	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	06/26/2015	CCN
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	06/26/2015	CCN
Styrene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Bromoform	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,3-Trichloropropane	EPA-8260	U	0.023	1	UG/L	06/26/2015	CCN
Bromobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-062515W - Batch 94687 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	DATE	BY
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.10	1	UG/L	06/26/2015	CCN
Hexachlorobutadiene	EPA-8260	U	0.069	1	UG/L	06/26/2015	CCN
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	06/26/2015	CCN

U - Analyte analyzed for but not detected at level above reporting limit.

MB-063015W2 - Batch 95021 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP
Acenaphthene	EPA-8270 SIM	U	0.015	1	UG/L	07/06/2015	GAP
Fluorene	EPA-8270 SIM	U	0.0097	1	UG/L	07/06/2015	GAP
Pentachlorophenol	EPA-8270 SIM	U	0.13	1	UG/L	07/06/2015	GAP
Phenanthrene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Anthracene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Fluoranthene	EPA-8270 SIM	U	0.0098	1	UG/L	07/06/2015	GAP
Pyrene	EPA-8270 SIM	U	0.011	1	UG/L	07/06/2015	GAP
Benzo[A]Anthracene	EPA-8270 SIM	U	0.018	1	UG/L	07/06/2015	GAP
Chrysene	EPA-8270 SIM	U	0.019	1	UG/L	07/06/2015	GAP
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.0073	1	UG/L	07/06/2015	GAP
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.014	1	UG/L	07/06/2015	GAP
Benzo[A]Pyrene	EPA-8270 SIM	U	0.029	1	UG/L	07/06/2015	GAP
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.015	1	UG/L	07/06/2015	GAP
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.012	1	UG/L	07/06/2015	GAP
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	UG/L	07/06/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB-063015W2 - Batch 95024 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodimethylamine	EPA-8270	U	1.5	1	UG/L	07/07/2015	GAP
Phenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Aniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-063015W2 - Batch 95024 - Water by EPA-8270

Bis(2-Chloroethyl)Ether	EPA-8270	U	0.94	1	UG/L	07/07/2015	GAP
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Hexachloroethane	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Isophorone	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Benzoic Acid	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloroaniline	EPA-8270	U	1.9	1	UG/L	07/07/2015	GAP
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4,6-Trichlorophenol	EPA-8270	U	0.90	1	UG/L	07/07/2015	GAP
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,6-Dinitrotoluene	EPA-8270	U	1.8	1	UG/L	07/07/2015	GAP
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	07/07/2015	GAP
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
2,4-Dinitrotoluene	EPA-8270	U	0.78	1	UG/L	07/07/2015	GAP
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Azobenzene	EPA-8270	U	1.6	1	UG/L	07/07/2015	GAP
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Carbazole	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Pyrene	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-063015W2 - Batch 95024 - Water by EPA-8270

Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.81	1	UG/L	07/07/2015	GAP
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	07/07/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/06/2015 - Batch R258236 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1221	EPA-8082	U	0.010	1	UG/L	07/06/2015	CAS
PCB-1232	EPA-8082	U	0.0078	1	UG/L	07/06/2015	CAS
PCB-1242	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1248	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1254	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS
PCB-1260	EPA-8082	U	0.0050	1	UG/L	07/06/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/08/2015 - Batch R258237 - Water by EPA-8081

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
A-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
G-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
B-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
D-BHC	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Aldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Heptachlor Epoxide	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Chlordane	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan I	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDE	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Dieldrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDD	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan II	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
4,4'-DDT	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endrin Aldehyde	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Endosulfan Sulfate	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Methoxychlor	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS
Hexachlorobenzene	EPA-8081	U	0.010	1	UG/L	07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/21/2015
 130 - 2nd Ave. S. ALS SDG#: EV15060188
 Edmonds, WA 98020 WDOE ACCREDITATION: C601

CLIENT CONTACT: Jeffrey Fellows
 CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY BLANK RESULTS

MB1-07/08/2015 - Batch R258237 - Water by EPA-8081

Toxaphene	EPA-8081	U	0.50	1	UG/L	07/08/2015	CAS
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U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-258237 - Batch R258237 - Water by SM2540C

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	07/01/2015	DNT
Total Dissolved Solids	SM2540C	U	5.0	1	MG/L	06/27/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-257714 - Batch R257714 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chloride	EPA-300.0	U	0.092	1	MG/L	06/27/2015	DNT
Fluoride	EPA-300.0	U	0.16	1	MG/L	06/27/2015	DNT
Nitrate as N	EPA-300.0	U	0.034	1	MG/L	06/27/2015	DNT
Nitrite as N	EPA-300.0	U	0.043	1	MG/L	06/27/2015	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	06/27/2015	DNT

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-6302015 - Batch R257364 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	0.11	1	UG/L	06/30/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-257683 - Batch R257683 - Water by EPA-7470

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-7470	U	0.11	1	UG/L	07/01/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-070115W - Batch 94855 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	0.45	1	UG/L	07/06/2015	RAL
Barium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium	EPA-200.8	150	100	1	UG/L	07/06/2015	RAL
Chromium	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 7/21/2015 ALS SDG#: EV15060188 WDOE ACCREDITATION: C601
CLIENT CONTACT:	Jeffrey Fellows	
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	

LABORATORY BLANK RESULTS

MB-070115W - Batch 94855 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Iron	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Lead	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Manganese	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Potassium	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Selenium	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-070115W - Batch 94856 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved)	EPA-200.8	U	0.45	1	UG/L	07/06/2015	RAL
Barium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	07/06/2015	RAL
Calcium (Dissolved)	EPA-200.8	150	100	1	UG/L	07/06/2015	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Iron (Dissolved)	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Lead (Dissolved)	EPA-200.8	U	0.28	1	UG/L	07/06/2015	RAL
Magnesium (Dissolved)	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Manganese (Dissolved)	EPA-200.8	U	2.0	1	UG/L	07/06/2015	RAL
Potassium (Dissolved)	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL
Selenium (Dissolved)	EPA-200.8	U	4.0	1	UG/L	07/06/2015	RAL
Silver (Dissolved)	EPA-200.8	U	0.20	1	UG/L	07/06/2015	RAL
Sodium (Dissolved)	EPA-200.8	U	50	1	UG/L	07/06/2015	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/07/2015 - Batch R258235 - Water by SM2320B

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total	SM2320B	U	15	1	MG/L	07/07/2015	CAS
Bicarbonate as CaCO3	SM2320B	U	15	1	MG/L	07/07/2015	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/09/2015 - Batch R258234 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Ammonia as N	EPA-350.1	U	0.050	1	MG/L	07/09/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 7/21/2015
130 - 2nd Ave. S. ALS SDG#: EV15060188
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Jeffrey Fellows
CLIENT PROJECT: Yakima Landfill / #1148008.030.032

LABORATORY BLANK RESULTS

MB1-07/09/2015 - Batch R258234 - Water by EPA-350.1

U - Analyte analyzed for but not detected at level above reporting limit.

MB1-07/01/2015 - Batch R258233 - Water by SM5310C

Table with 10 columns: ANALYTE, METHOD, RESULTS, REPORTING LIMITS, DILUTION FACTOR, UNITS, ANALYSIS DATE, ANALYSIS BY. Row 1: Total Organic Carbon (TOC), SM5310C, U, 0.50, 1, MG/L, 07/01/2015, CAS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 94804 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24) - BS	NWTPH-DX	85.5			06/28/2015	EBS
TPH-Diesel Range (C12-C24) - BSD	NWTPH-DX	93.9	9		06/28/2015	EBS

ALS Test Batch ID: 94687 - Water by EPA-8260 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Trichloroethene - BS	EPA-8260 SIM	95.9			06/26/2015	CCN
Trichloroethene - BSD	EPA-8260 SIM	97.5	2		06/26/2015	CCN

ALS Test Batch ID: 94687 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	88.7			06/26/2015	CCN
1,1-Dichloroethene - BSD	EPA-8260	90.8	2		06/26/2015	CCN
Benzene - BS	EPA-8260	95.7			06/26/2015	CCN
Benzene - BSD	EPA-8260	98.6	3		06/26/2015	CCN
Toluene - BS	EPA-8260	97.9			06/26/2015	CCN
Toluene - BSD	EPA-8260	100	3		06/26/2015	CCN
Chlorobenzene - BS	EPA-8260	103			06/26/2015	CCN
Chlorobenzene - BSD	EPA-8260	106	3		06/26/2015	CCN

ALS Test Batch ID: 95024 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	37.5			07/07/2015	GAP
Phenol - BSD	EPA-8270	38.0	1		07/07/2015	GAP
2-Chlorophenol - BS	EPA-8270	94.1			07/07/2015	GAP
2-Chlorophenol - BSD	EPA-8270	95.0	1		07/07/2015	GAP
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	93.9			07/07/2015	GAP
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	98.6	5		07/07/2015	GAP
4-Chloro-3-Methylphenol - BS	EPA-8270	91.1			07/07/2015	GAP
4-Chloro-3-Methylphenol - BSD	EPA-8270	94.7	4		07/07/2015	GAP
4-Nitrophenol - BS	EPA-8270	23.4			07/07/2015	GAP
4-Nitrophenol - BSD	EPA-8270	23.4	0		07/07/2015	GAP
2,4-Dinitrotoluene - BS	EPA-8270	74.8			07/07/2015	GAP
2,4-Dinitrotoluene - BSD	EPA-8270	77.1	3		07/07/2015	GAP
Pyrene - BS	EPA-8270	111			07/07/2015	GAP
Pyrene - BSD	EPA-8270	119	7		07/07/2015	GAP



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R258236 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-1016 - BS	EPA-8082	83.0			07/06/2015	CAS
PCB-1016 - BSD	EPA-8082	84.0	1		07/06/2015	CAS
PCB-1260 - BS	EPA-8082	91.0			07/06/2015	CAS
PCB-1260 - BSD	EPA-8082	91.5	1		07/06/2015	CAS

ALS Test Batch ID: R258237 - Water by EPA-8081

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
A-BHC - BS	EPA-8081	84.5			07/08/2015	CAS
A-BHC - BSD	EPA-8081	82.0	3		07/08/2015	CAS
G-BHC - BS	EPA-8081	84.0			07/08/2015	CAS
G-BHC - BSD	EPA-8081	81.0	4		07/08/2015	CAS
B-BHC - BS	EPA-8081	86.5			07/08/2015	CAS
B-BHC - BSD	EPA-8081	78.5	10		07/08/2015	CAS
Heptachlor - BS	EPA-8081	78.5			07/08/2015	CAS
Heptachlor - BSD	EPA-8081	74.5	5		07/08/2015	CAS
D-BHC - BS	EPA-8081	85.5			07/08/2015	CAS
D-BHC - BSD	EPA-8081	82.5	4		07/08/2015	CAS
Aldrin - BS	EPA-8081	74.0			07/08/2015	CAS
Aldrin - BSD	EPA-8081	72.5	2		07/08/2015	CAS
Heptachlor Epoxide - BS	EPA-8081	82.0			07/08/2015	CAS
Heptachlor Epoxide - BSD	EPA-8081	80.5	2		07/08/2015	CAS
Chlordane - BS	EPA-8081	79.0			07/08/2015	CAS
Chlordane - BSD	EPA-8081	76.0	4		07/08/2015	CAS
Endosulfan I - BS	EPA-8081	62.5			07/08/2015	CAS
Endosulfan I - BSD	EPA-8081	61.0	2		07/08/2015	CAS
4,4'-DDE - BS	EPA-8081	80.5			07/08/2015	CAS
4,4'-DDE - BSD	EPA-8081	75.5	6		07/08/2015	CAS
Dieldrin - BS	EPA-8081	82.5			07/08/2015	CAS
Dieldrin - BSD	EPA-8081	80.5	2		07/08/2015	CAS
Endrin - BS	EPA-8081	86.5			07/08/2015	CAS
Endrin - BSD	EPA-8081	84.0	3		07/08/2015	CAS
4,4'-DDD - BS	EPA-8081	78.5			07/08/2015	CAS
4,4'-DDD - BSD	EPA-8081	75.0	5		07/08/2015	CAS
Endosulfan II - BS	EPA-8081	67.0			07/08/2015	CAS
Endosulfan II - BSD	EPA-8081	65.0	3		07/08/2015	CAS
4,4'-DDT - BS	EPA-8081	77.0			07/08/2015	CAS
4,4'-DDT - BSD	EPA-8081	70.0	10		07/08/2015	CAS
Endrin Aldehyde - BS	EPA-8081	74.5			07/08/2015	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Endrin Aldehyde - BSD	EPA-8081	70.0	6		07/08/2015	CAS
Endosulfan Sulfate - BS	EPA-8081	80.0			07/08/2015	CAS
Endosulfan Sulfate - BSD	EPA-8081	77.5	3		07/08/2015	CAS
Methoxychlor - BS	EPA-8081	73.5			07/08/2015	CAS
Methoxychlor - BSD	EPA-8081	68.0	8		07/08/2015	CAS
Hexachlorobenzene - BS	EPA-8081	86.5			07/08/2015	CAS
Hexachlorobenzene - BSD	EPA-8081	85.0	2		07/08/2015	CAS
Toxaphene - BS	EPA-8081	93.4			07/08/2015	CAS
Toxaphene - BSD	EPA-8081	87.3	7		07/08/2015	CAS

ALS Test Batch ID: R258237 - Water by SM2540C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Dissolved Solids - BS	SM2540C	85.6			07/01/2015	DNT
Total Dissolved Solids - BS	SM2540C	96.0			06/27/2015	DNT

ALS Test Batch ID: R257714 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Chloride - BS	EPA-300.0	99.0			06/27/2015	DNT
Chloride - BSD	EPA-300.0	96.5	3		06/27/2015	DNT
Fluoride - BS	EPA-300.0	104			06/27/2015	DNT
Fluoride - BSD	EPA-300.0	102	1		06/27/2015	DNT
Nitrate as N - BS	EPA-300.0	102			06/27/2015	DNT
Nitrate as N - BSD	EPA-300.0	108	6		06/27/2015	DNT
Nitrite as N - BS	EPA-300.0	95.5			06/27/2015	DNT
Nitrite as N - BSD	EPA-300.0	96.5	1		06/27/2015	DNT
Sulfate - BS	EPA-300.0	110			06/27/2015	DNT
Sulfate - BSD	EPA-300.0	103	7		06/27/2015	DNT

ALS Test Batch ID: R257364 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	EPA-7470	102			06/30/2015	RAL
Mercury - BSD	EPA-7470	99.0	3		06/30/2015	RAL

ALS Test Batch ID: R257683 - Water by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BS	EPA-7470	104			07/01/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved) - BSD	EPA-7470	101	3		07/01/2015	RAL

ALS Test Batch ID: 94855 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	94.6			07/06/2015	RAL
Arsenic - BSD	EPA-200.8	96.5	2		07/06/2015	RAL
Barium - BS	EPA-200.8	103			07/06/2015	RAL
Barium - BSD	EPA-200.8	97.6	5		07/06/2015	RAL
Cadmium - BS	EPA-200.8	98.4			07/06/2015	RAL
Cadmium - BSD	EPA-200.8	97.6	1		07/06/2015	RAL
Calcium - BS	EPA-200.8	106		B	07/06/2015	RAL
Calcium - BSD	EPA-200.8	96.8	9	B	07/06/2015	RAL
Chromium - BS	EPA-200.8	97.9			07/06/2015	RAL
Chromium - BSD	EPA-200.8	94.9	3		07/06/2015	RAL
Iron - BS	EPA-200.8	97.8			07/06/2015	RAL
Iron - BSD	EPA-200.8	96.9	1		07/06/2015	RAL
Lead - BS	EPA-200.8	97.2			07/06/2015	RAL
Lead - BSD	EPA-200.8	95.4	2		07/06/2015	RAL
Magnesium - BS	EPA-200.8	96.0			07/06/2015	RAL
Magnesium - BSD	EPA-200.8	93.6	3		07/06/2015	RAL
Manganese - BS	EPA-200.8	99.8			07/06/2015	RAL
Manganese - BSD	EPA-200.8	97.6	2		07/06/2015	RAL
Potassium - BS	EPA-200.8	95.5			07/06/2015	RAL
Potassium - BSD	EPA-200.8	93.6	2		07/06/2015	RAL
Selenium - BS	EPA-200.8	92.5			07/06/2015	RAL
Selenium - BSD	EPA-200.8	95.2	3		07/06/2015	RAL
Silver - BS	EPA-200.8	98.0			07/06/2015	RAL
Silver - BSD	EPA-200.8	97.6	0		07/06/2015	RAL
Sodium - BS	EPA-200.8	94.2			07/06/2015	RAL
Sodium - BSD	EPA-200.8	92.4	2		07/06/2015	RAL

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.

ALS Test Batch ID: 94856 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	94.6			07/06/2015	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	96.5	2		07/06/2015	RAL
Barium (Dissolved) - BS	EPA-200.8	103			07/06/2015	RAL
Barium (Dissolved) - BSD	EPA-200.8	97.6	5		07/06/2015	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: 7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#: EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Cadmium (Dissolved) - BS	EPA-200.8	98.4			07/06/2015	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	97.6	1		07/06/2015	RAL
Calcium (Dissolved) - BS	EPA-200.8	106		B	07/06/2015	RAL
Calcium (Dissolved) - BSD	EPA-200.8	96.8	9	B	07/06/2015	RAL
Chromium (Dissolved) - BS	EPA-200.8	97.9			07/06/2015	RAL
Chromium (Dissolved) - BSD	EPA-200.8	94.9	3		07/06/2015	RAL
Iron (Dissolved) - BS	EPA-200.8	97.8			07/06/2015	RAL
Iron (Dissolved) - BSD	EPA-200.8	96.9	1		07/06/2015	RAL
Lead (Dissolved) - BS	EPA-200.8	97.2			07/06/2015	RAL
Lead (Dissolved) - BSD	EPA-200.8	95.4	2		07/06/2015	RAL
Magnesium (Dissolved) - BS	EPA-200.8	96.0			07/06/2015	RAL
Magnesium (Dissolved) - BSD	EPA-200.8	93.6	3		07/06/2015	RAL
Manganese (Dissolved) - BS	EPA-200.8	99.8			07/06/2015	RAL
Manganese (Dissolved) - BSD	EPA-200.8	97.6	2		07/06/2015	RAL
Potassium (Dissolved) - BS	EPA-200.8	95.5			07/06/2015	RAL
Potassium (Dissolved) - BSD	EPA-200.8	93.6	2		07/06/2015	RAL
Selenium (Dissolved) - BS	EPA-200.8	92.5			07/06/2015	RAL
Selenium (Dissolved) - BSD	EPA-200.8	95.2	3		07/06/2015	RAL
Silver (Dissolved) - BS	EPA-200.8	98.0			07/06/2015	RAL
Silver (Dissolved) - BSD	EPA-200.8	97.6	0		07/06/2015	RAL
Sodium (Dissolved) - BS	EPA-200.8	94.2			07/06/2015	RAL
Sodium (Dissolved) - BSD	EPA-200.8	92.4	2		07/06/2015	RAL

B - Analyte detected in sample and method blank. Reported result is sample concentration without blank correction or associated quantitation limit.

ALS Test Batch ID: R258235 - Water by SM2320B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Alkalinity as CaCO3, Total - BS	SM2320B	103			07/07/2015	CAS

ALS Test Batch ID: R258234 - Water by EPA-350.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N 5X Dilution - BS	EPA-350.1	98.0			07/09/2015	CAS

ALS Test Batch ID: R258233 - Water by SM5310C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - BS	SM5310C	96.0			07/01/2015	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	7/21/2015
CLIENT CONTACT:	Jeffrey Fellows	ALS SDG#:	EV15060188
CLIENT PROJECT:	Yakima Landfill / #1148008.030.032	WDOE ACCREDITATION:	C601

MATRIX SPIKE RESULTS

ALS Test Batch ID: R258233 - Water

Parent Sample: MW-108-062515

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Total Organic Carbon (TOC) - MS	SM5310C	5.3	25.0	31.6		105		07/01/2015	CAS

ALS Test Batch ID: R258234 - Water

Parent Sample: MW-108-062515

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
Ammonia as N - MS	EPA-350.1	2.6	2.00	4.44		91.0		07/09/2015	CAS
Ammonia as N - MSD	EPA-350.1	2.6	2.00	4.46	0	92.0		07/09/2015	CAS

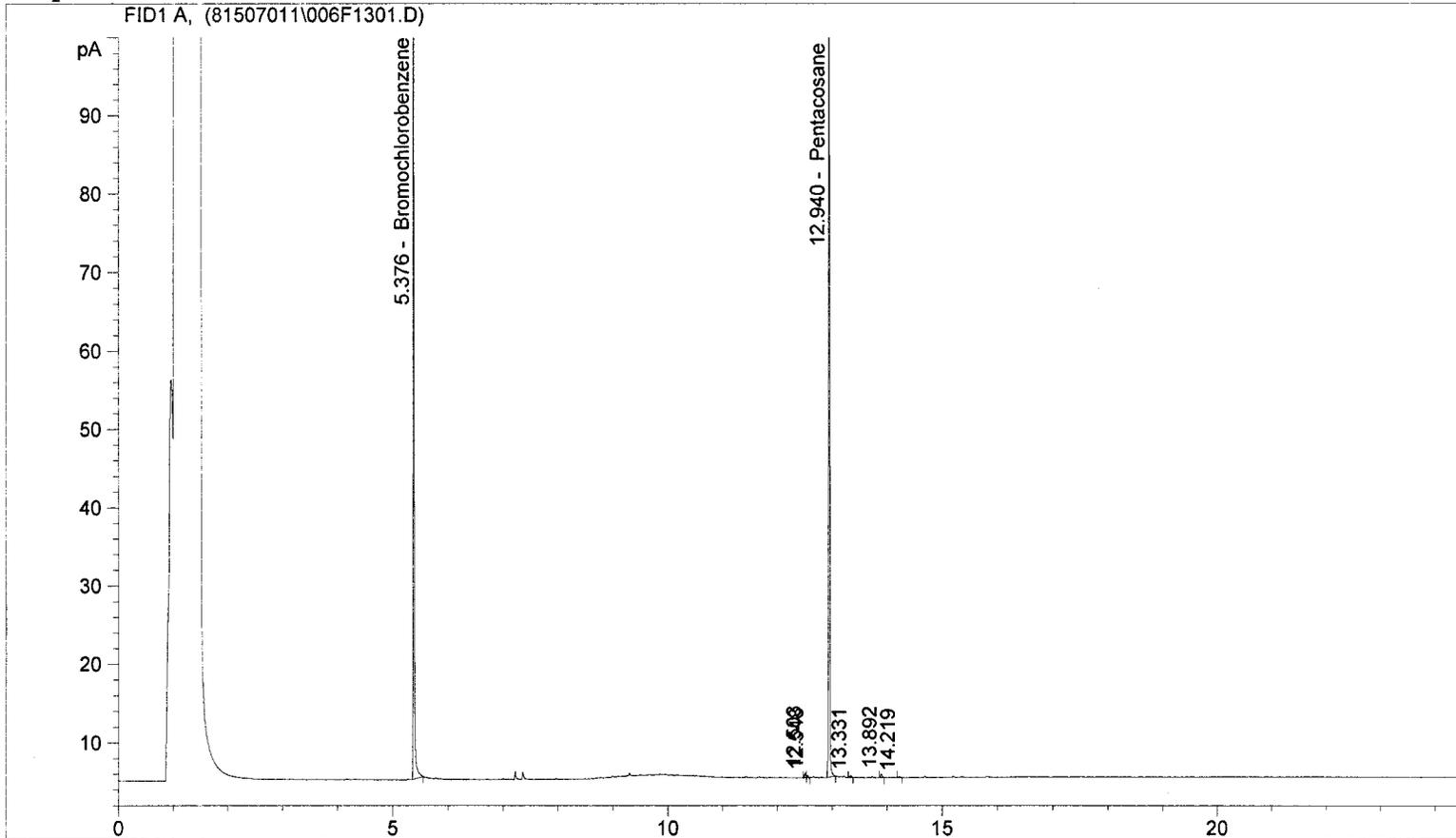
APPROVED BY



Laboratory Director

Instrument #81 Data File: C:\HPCHEM\1\DATA\81507011\006F1301.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 7/1/2015 3:21:16 PM 7/1/2015 3:21:16 PM
 Report Creation: 7/1/2015 6:00:30 PM

Sample Name: EV15060188-01 RR 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.376	FID1 A,	Bromochlorobenzene	143.271	24.787
12.940		Pentacosane	161.268	8.187

99%
82%

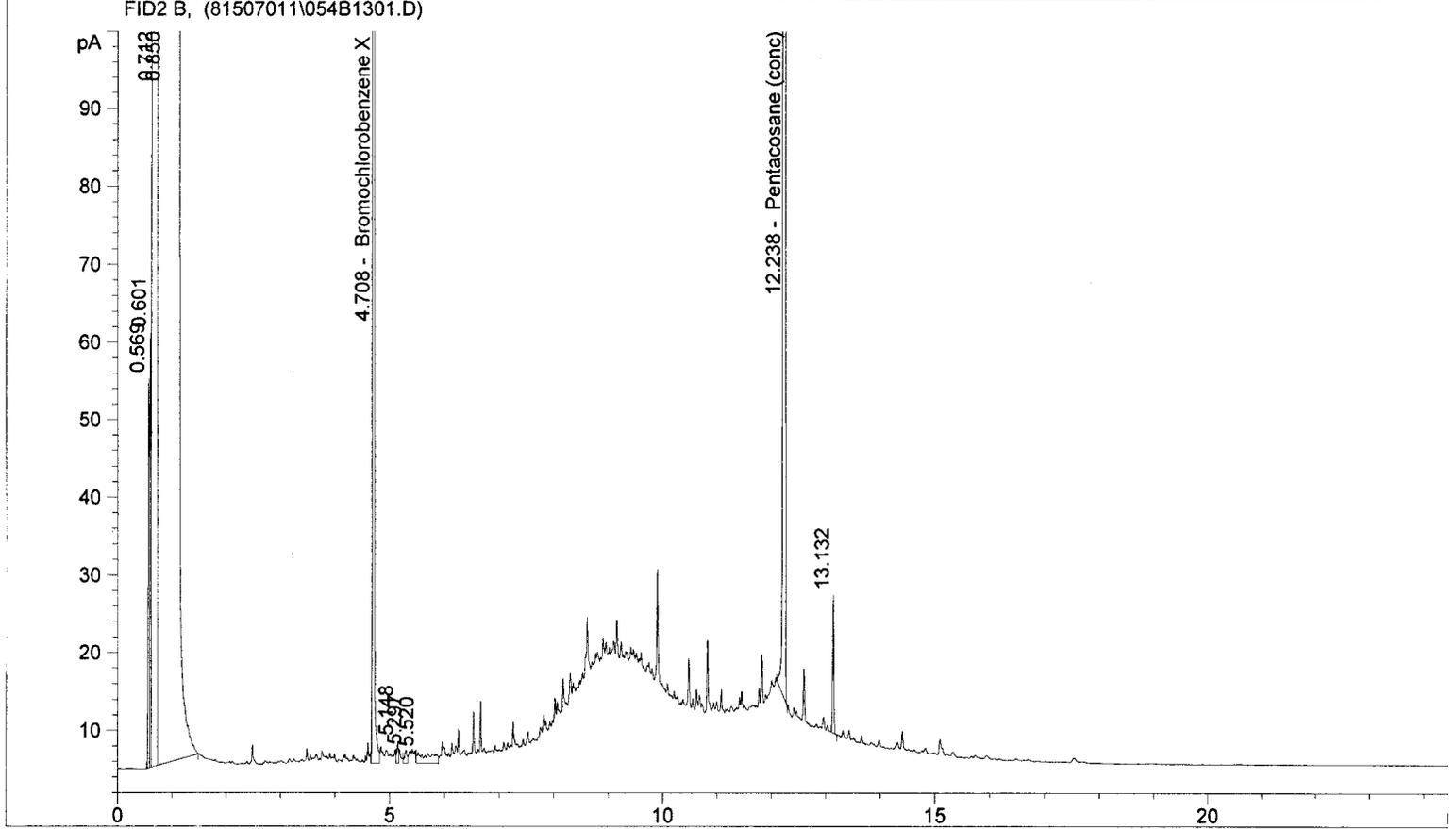
G < 130 µg/L
 D < 310 µg/L

REVIEWED BY BS
 & DATE 7/2/15

07.01.15 E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81507011\054B1301.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 7/1/2015 3:21:17 PM 7/1/2015 3:21:17 PM
 Report Creation: 7/1/2015 5:59:15 PM

Sample Name: EV15060188-01 RR 1 ML ->
 FID2 B, (81507011\054B1301.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene X	2880.408	224.268
12.238		Pentacosane (conc)	3086.115	80.099

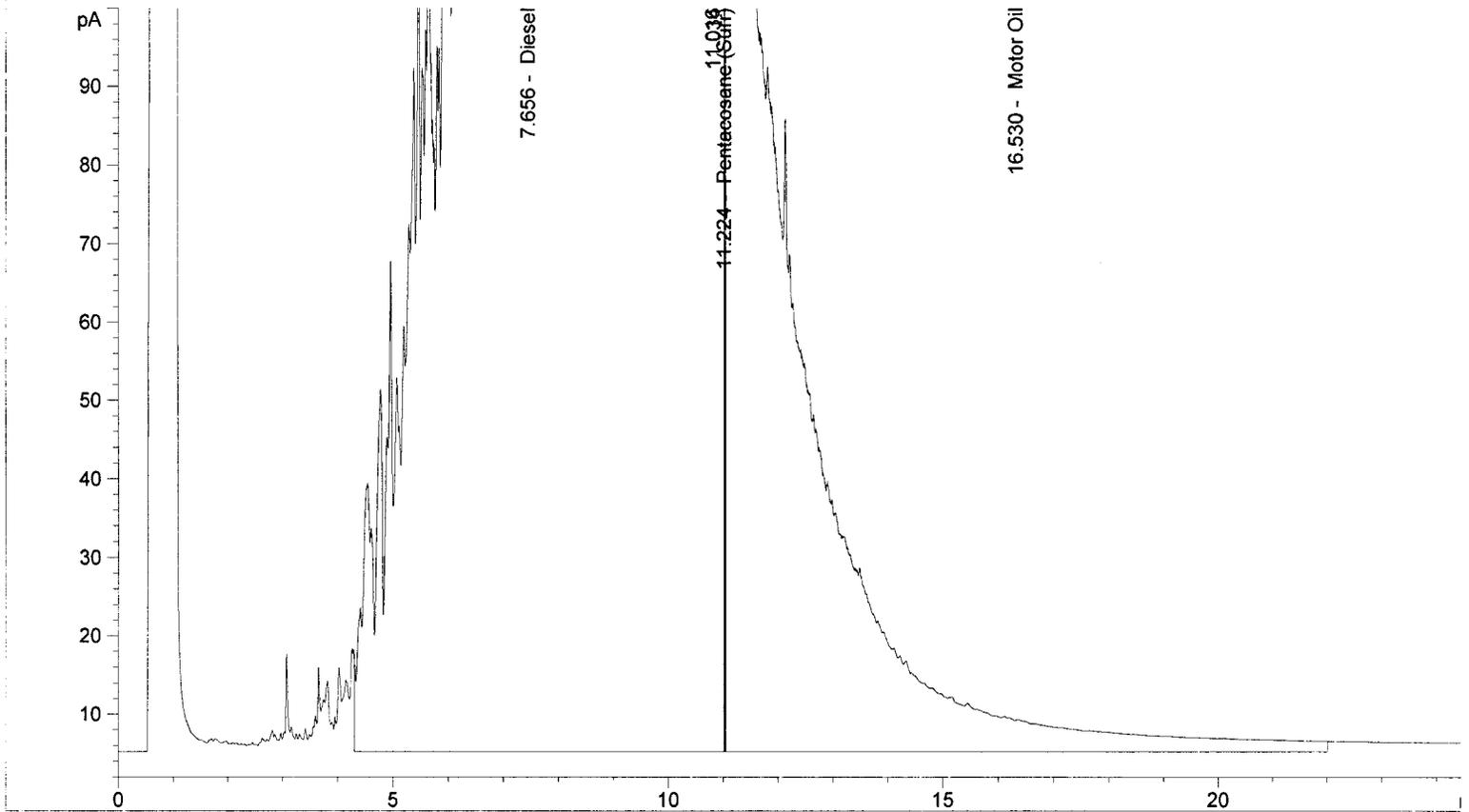
80%

0 < 310 µg/L

REVIEWED BY *MB*
 & DATE *7/1/15*

07.01.15E

Sample Name: EV15060188-02 W
 FID2 B, (81506291\058B2001.D)



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	55288.758	4297.619
11.224		Pentacosane (Surr)	1136.276	40.581
16.530		Motor Oil	11934.654	943.849

101%

$$D = 4297.619 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{498 \text{ mL}} = 8600 \text{ ug/L}$$

Unidentified Diesel
Range Product

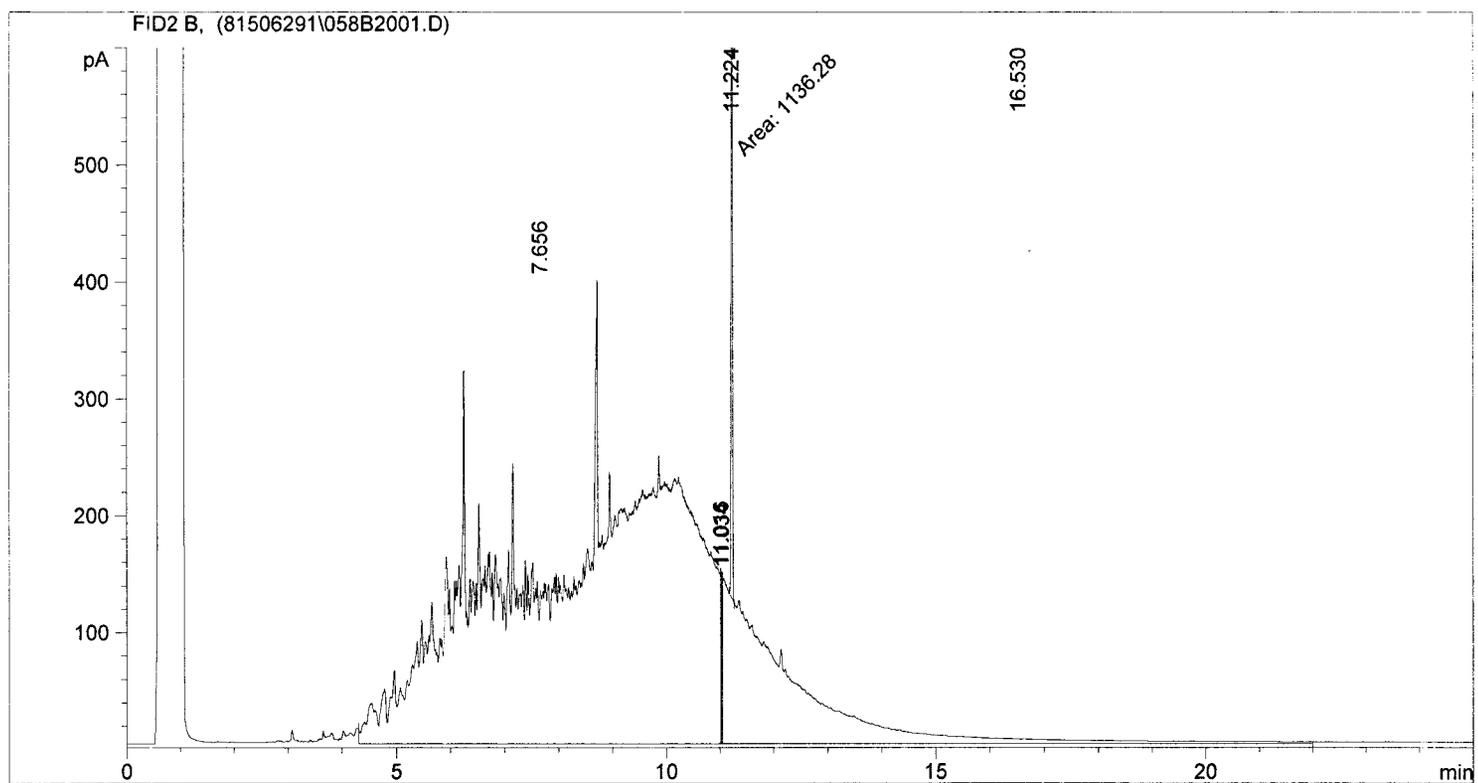
$$O = 943.849 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{498 \text{ mL}} = 1900 \text{ ug/L}$$

Unidentified Oil
Range Product

(bias high due to Diesel Range Product overlap)

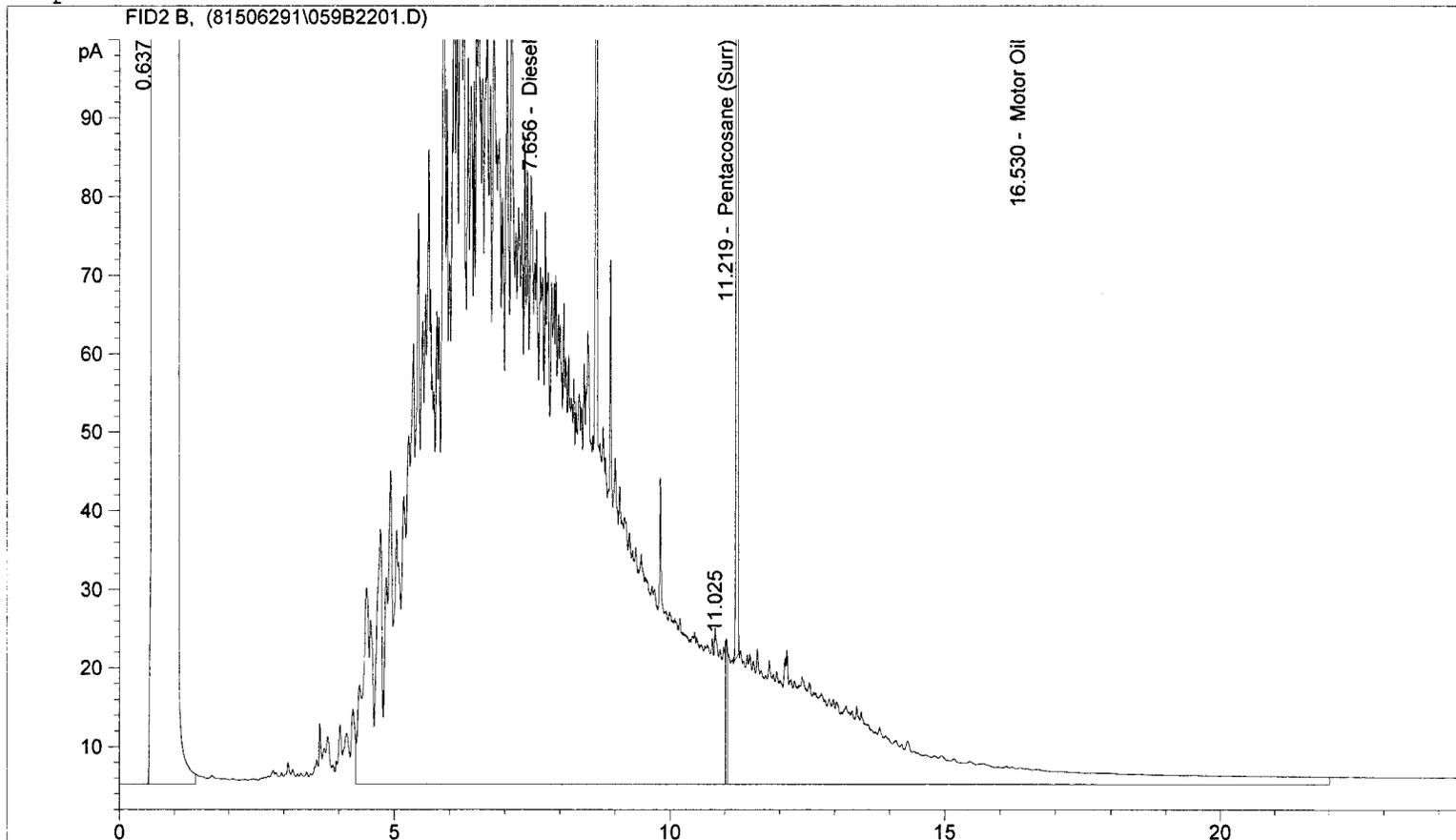
REVIEWED BY *MB*
 & DATE *7/12/15*

06.30.15E



*** End of Report ***

Sample Name: EV15060188-02 W SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
7.656	FID2 B,	Diesel	18914.432	1470.227
11.219		Pentacosane (Surr)	969.459	34.623
16.530		Motor Oil	2933.759	232.016

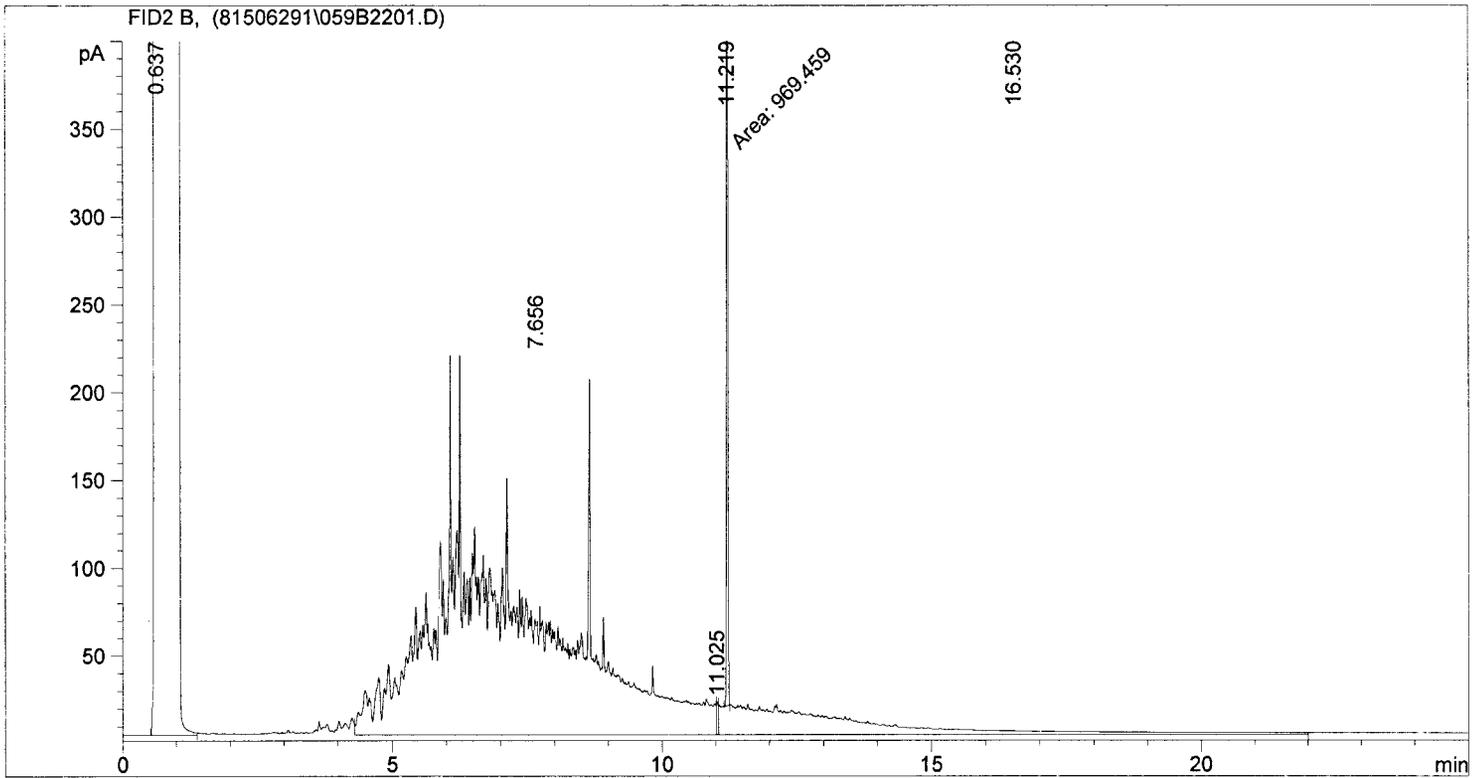
87%

$D = 1470.227 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{498 \text{ mL}} = 3000 \text{ ug/L}$ Unidentified Diesel Range Product

$O = 232.016 \text{ ug/mL} \times \frac{1.0 \text{ mL}}{498 \text{ mL}} = 470 \text{ ug/L}$ Unidentified Oil Range Product

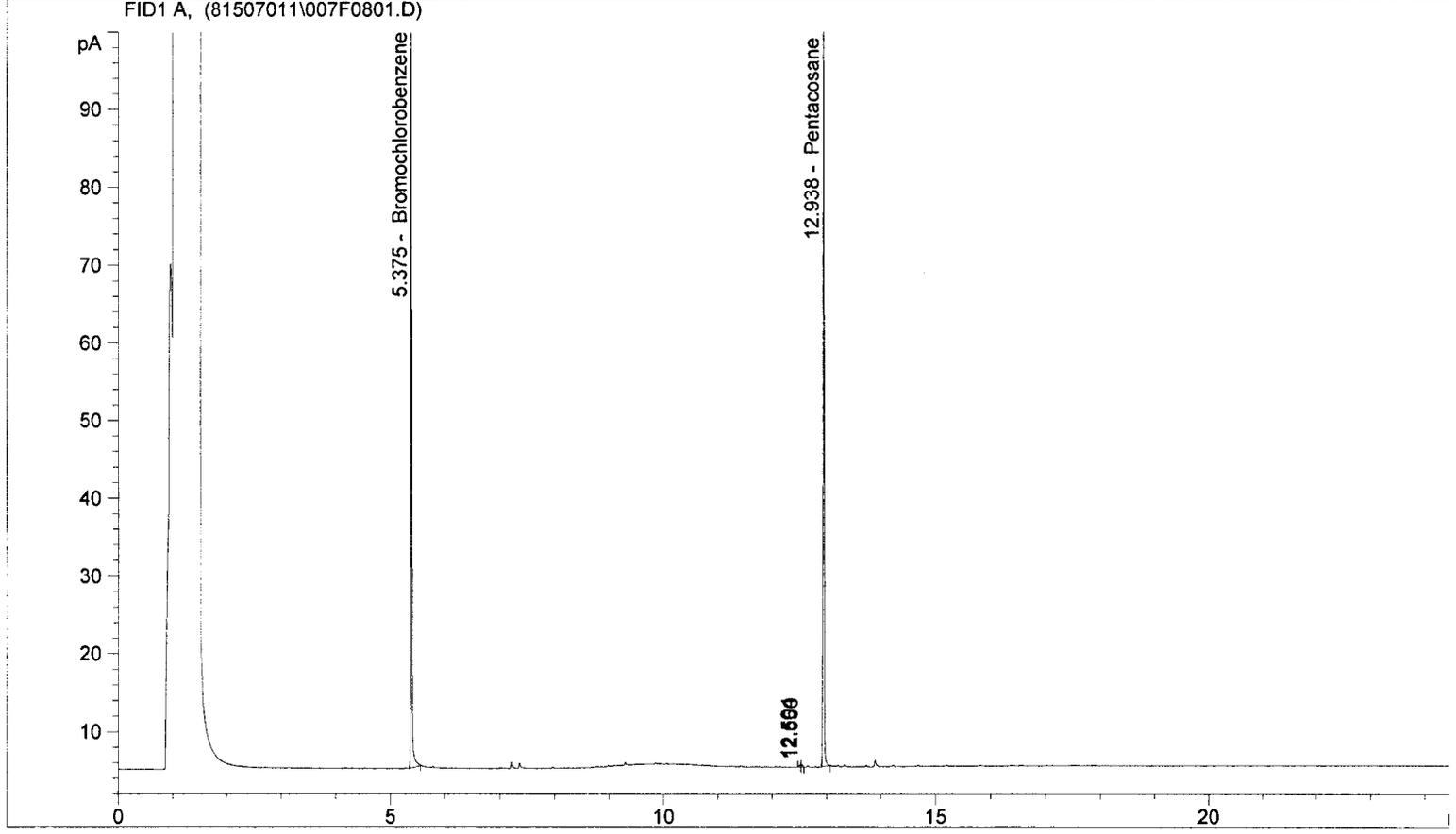
REVIEWED BY 13
 & DATE 7/2/15

(bias high due to Diesel Range Product overlap)
 07.02-15E



*** End of Report ***

Sample Name: EV15060188-03 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.375	FID1 A,	Bromochlorobenzene	116.593	20.171
12.938		Pentacosane	136.886	6.949

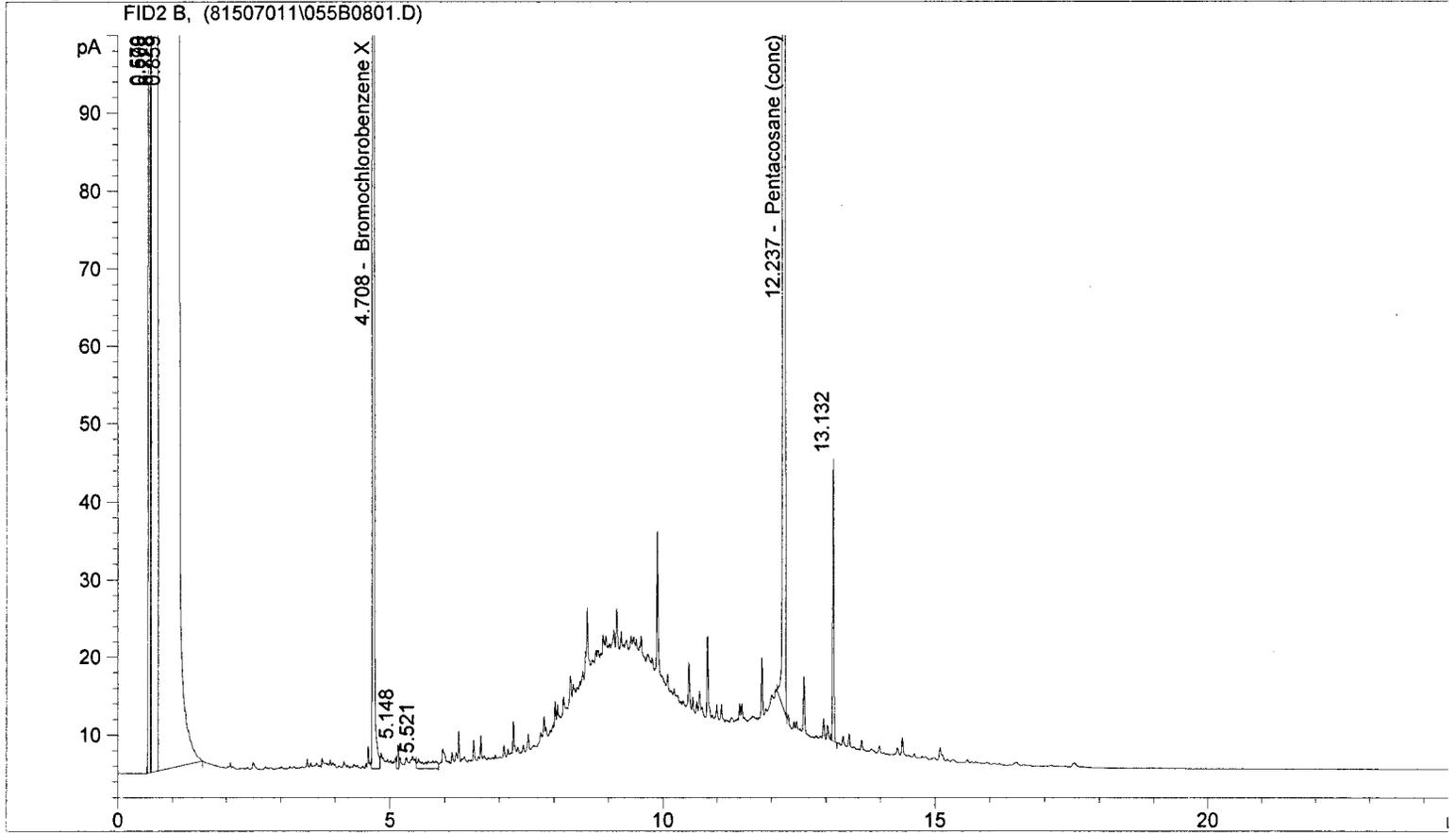
81/
097

G < 130 ug/L
D < 310 ug/L

REVIEWED BY *MS*
& DATE *7/2/15*

Instrument #81 Data File: C:\HPCHEM\1\DATA\81507011\055B0801.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 7/1/2015 12:23:00 PM 7/1/2015 12:23:00 PM
 Report Creation: 7/1/2015 1:20:25 PM

Sample Name: EV15060188-03 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene X	2730.080	212.564
12.237		Pentacosane (conc)	3075.927	79.834

80%

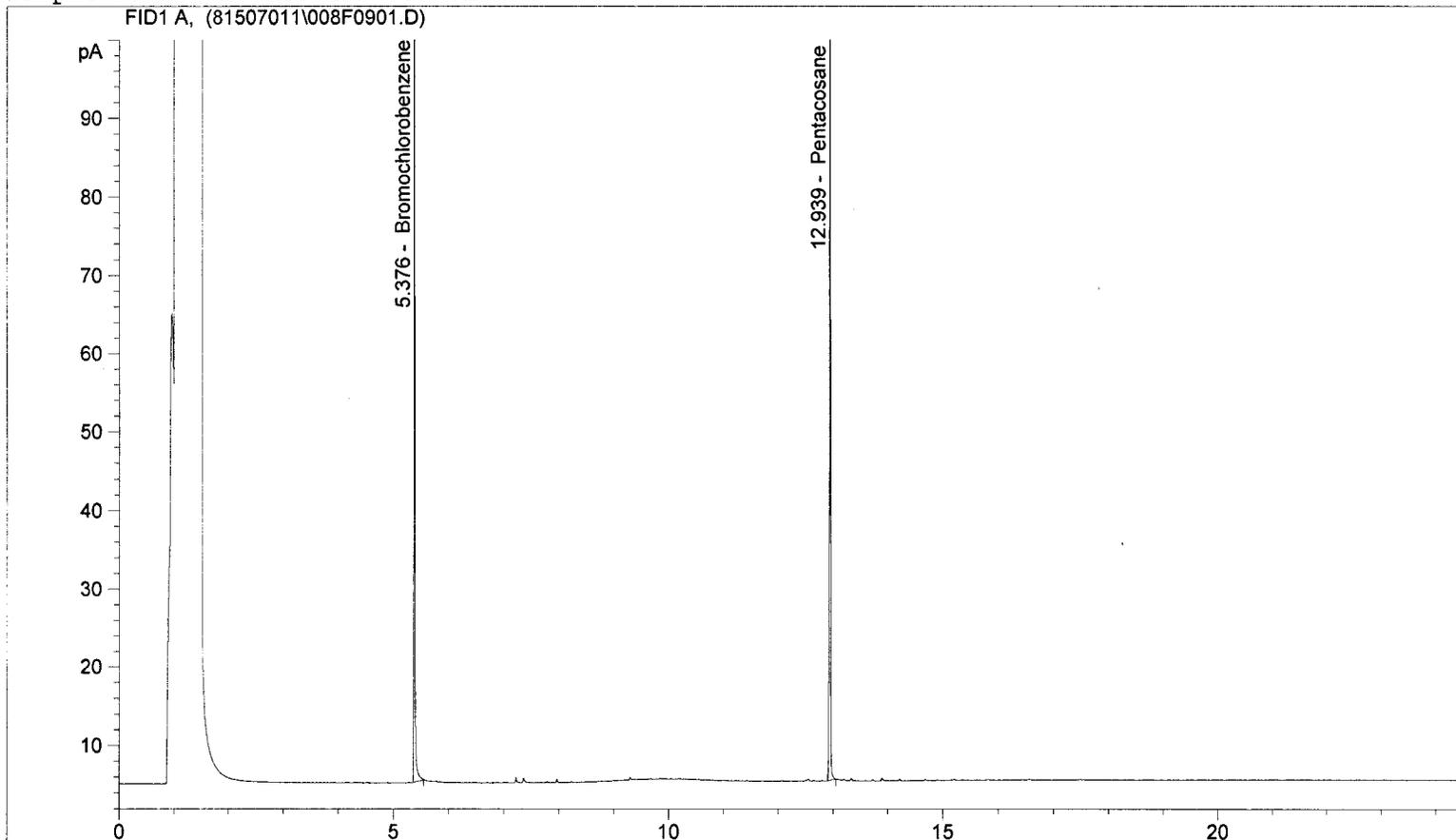
0 < 310 µg/L

REVIEWED BY *MB*
 & DATE *7/2/15*

07.01.15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81507011\008F0901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 7/1/2015 12:58:21 PM 7/1/2015 12:58:21 PM
 Report Creation: 7/1/2015 1:26:30 PM

Sample Name: EV15060188-04 10 ML ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.376	FID1 A,	Bromochlorobenzene	118.846	20.561 <i>82%</i>
12.939		Pentacosane	140.738	7.145 <i>71%</i>

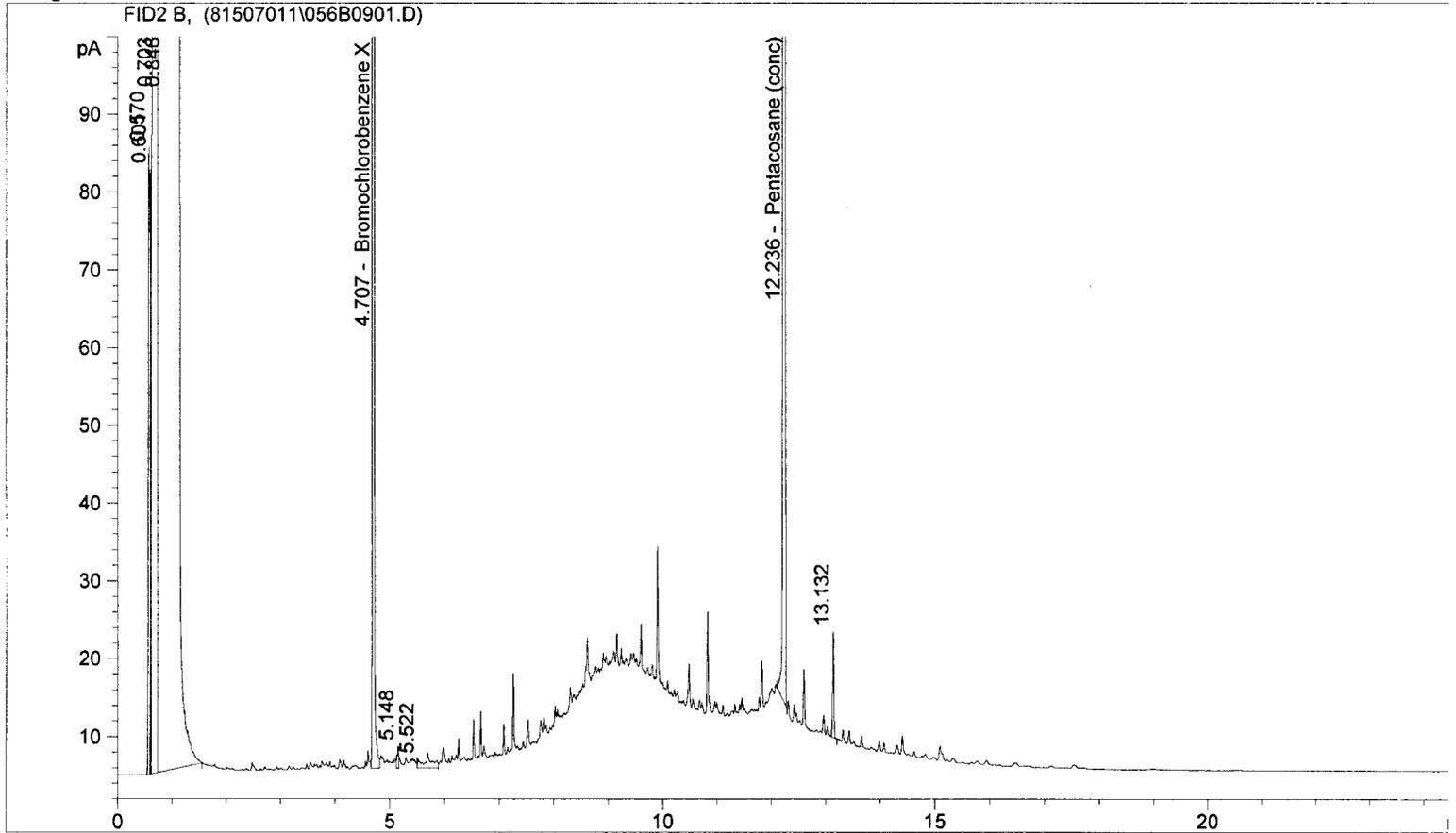
G < 130 ug/L
D < 310 ug/L

REVIEWED BY *MS*
 & DATE *7/12/15*

07.01.15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81507011\056B0901.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 7/1/2015 12:58:21 PM 7/1/2015 12:58:21 PM
 Report Creation: 7/1/2015 1:27:10 PM

Sample Name: EV15060188-04 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.707	FID2 B,	Bromochlorobenzene X	2605.362	202.853
12.236		Pentacosane (conc)	2937.843	76.250

76%

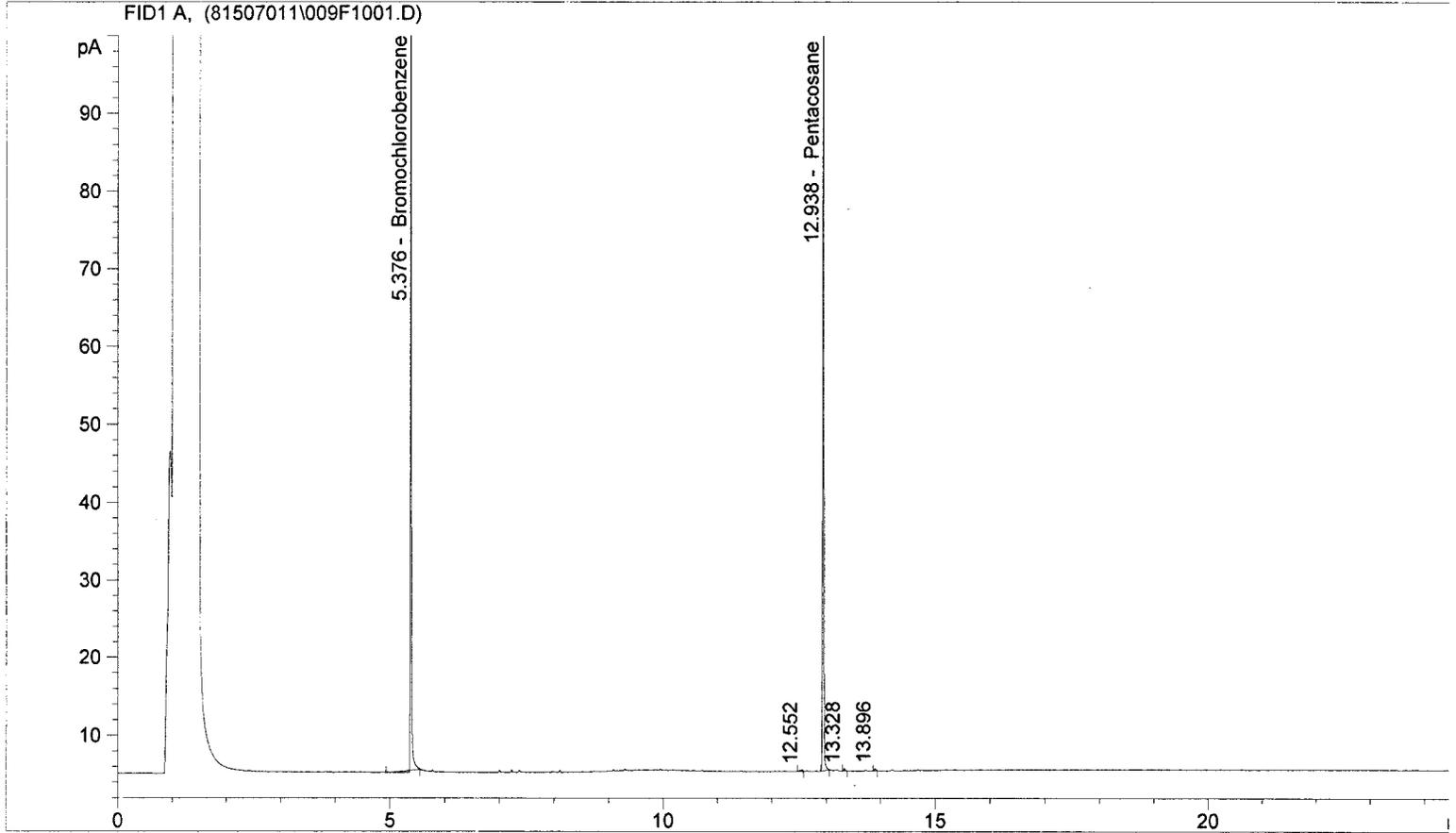
0 < 310 ug/L

REVIEWED BY *MS*
 & DATE *7/2/15*

06. 07.01.15 EJ

Instrument #81 Data File: C:\HPCHEM\1\DATA\81507011\009F1001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 7/1/2015 1:33:56 PM 7/1/2015 1:33:56 PM
 Report Creation: 7/1/2015 2:05:31 PM

Sample Name: EV15060188-05 10 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.376	FID1 A,	Bromochlorobenzene	131.681	22.781
12.938		Pentacosane	150.544	7.643

917.
767.

G < 130 ug/L
D < 310 ug/L

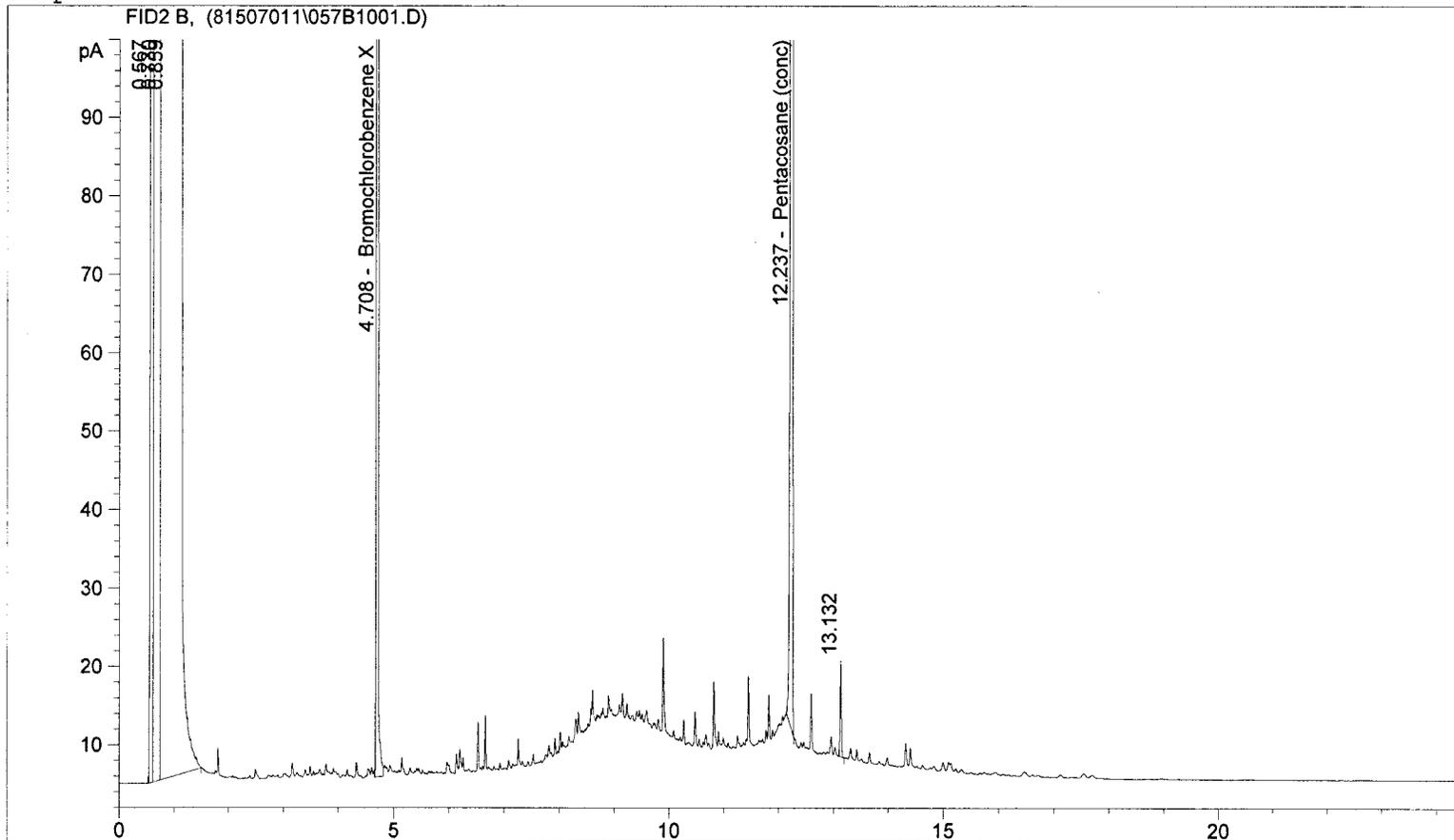
REVIEWED BY *MB*
 & DATE *7/2/15*

07.01.15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81507011\057B1001.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 7/1/2015 1:33:55 PM 7/1/2015 1:33:55 PM
 Report Creation: 7/1/2015 2:05:05 PM

Sample Name: EV15060188-05 1 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene X	2841.735	221.257
12.237		Pentacosane (conc)	3088.610	80.164

0 < 310 mg/L

REVIEWED BY
 & DATE

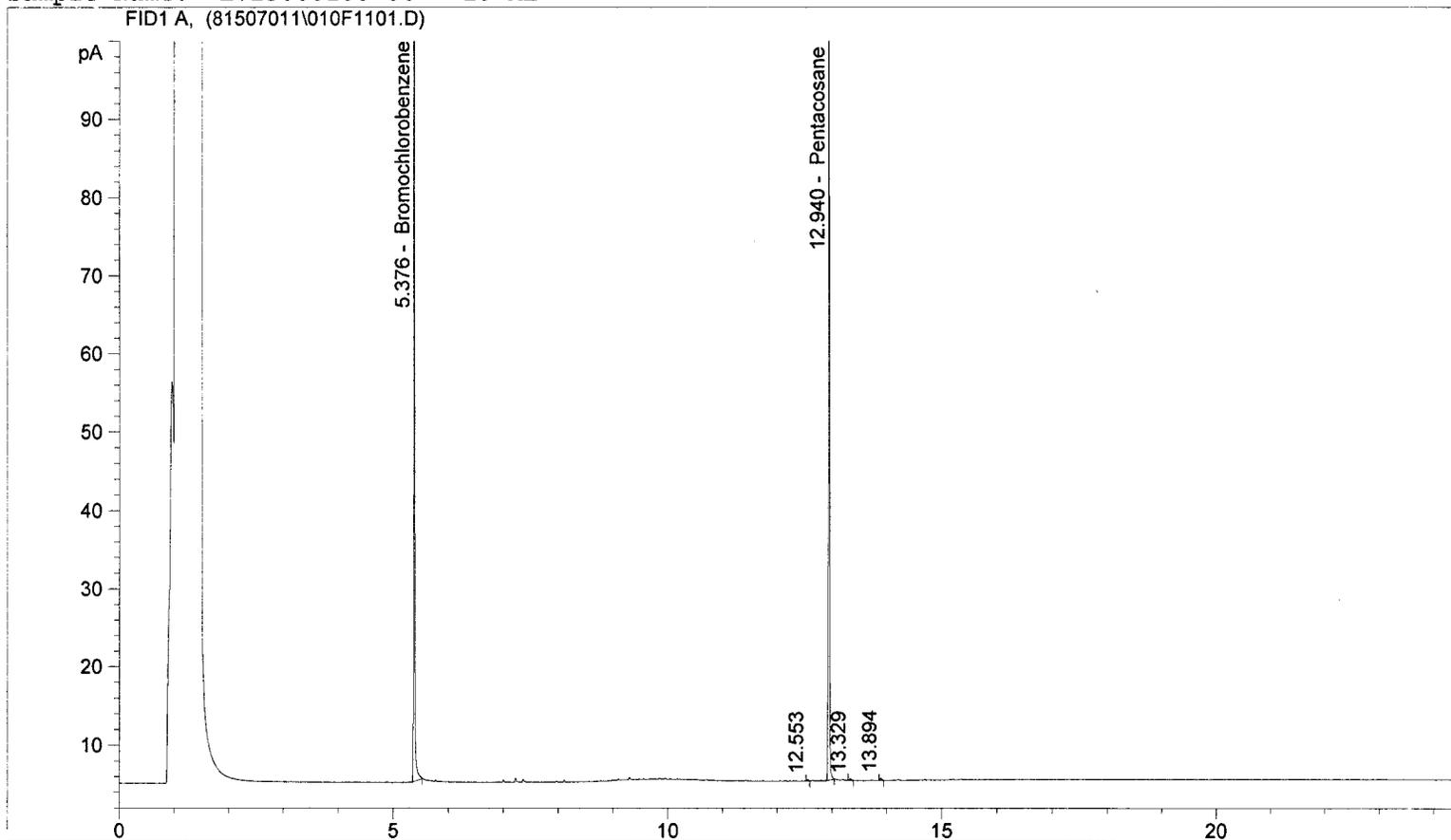
MS
 7/12/15

ES1.10.20

Instrument #81 Data File: C:\HPCHEM\1\DATA\81507011\010F1101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\FHCIDW.M
 Injection Date & Time: 7/1/2015 2:09:48 PM 7/1/2015 2:09:48 PM
 Report Creation: 7/1/2015 6:00:04 PM

Sample Name: EV15060188-06 10 ML

->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
5.376	FID1 A,	Bromochlorobenzene	134.778	23.317
12.940		Pentacosane	144.782	7.350

93%
74%

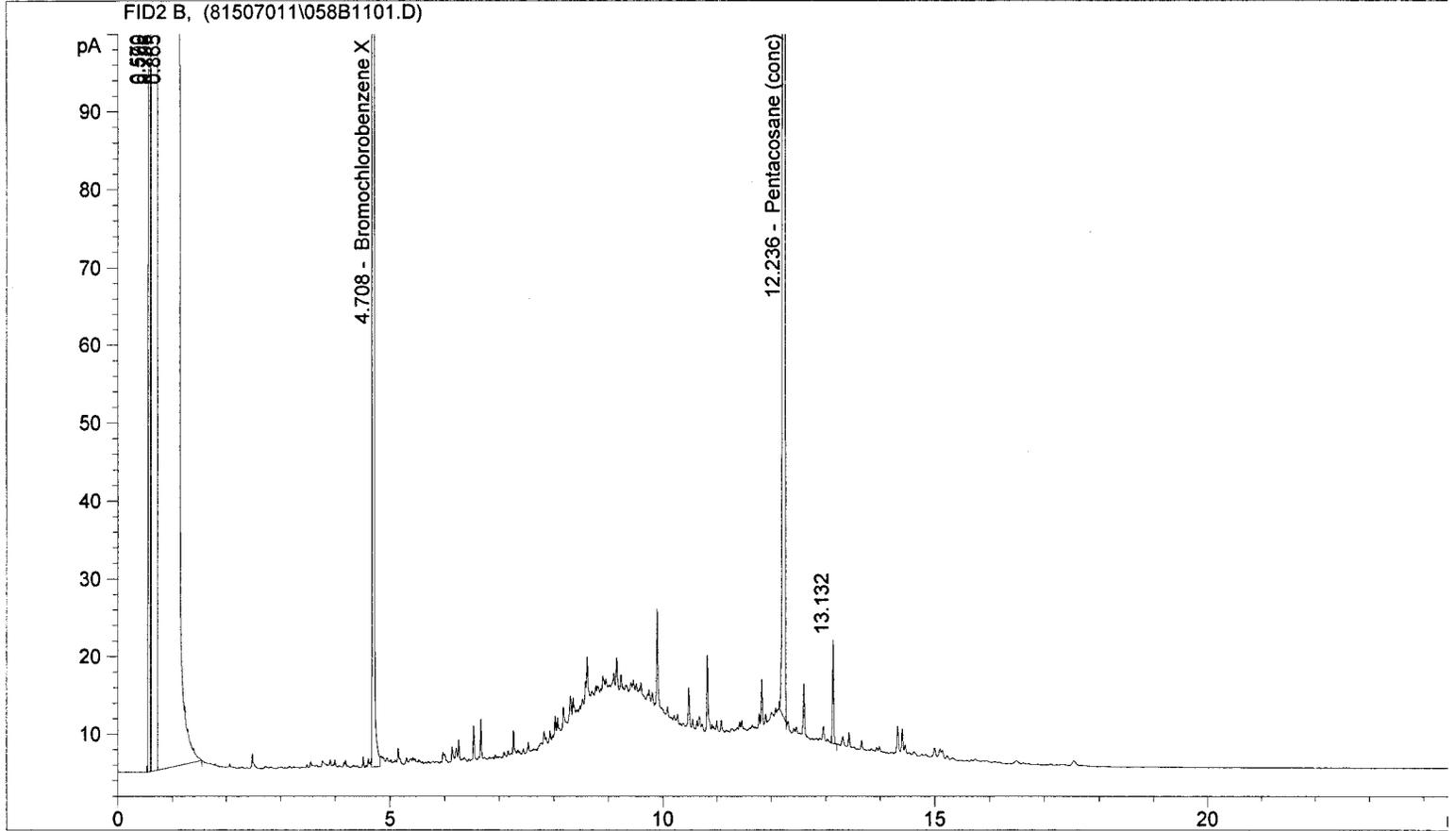
G < 130 µg/L
 D < 310 µg/L

REVIEWED BY *MB*
 & DATE *7/2/15*

07.02-15E

Instrument #81 Data File: C:\HPCHEM\1\DATA\81507011\058B1101.D
 Operator: EBS
 Method: C:\HPCHEM\1\METHODS\BHCIDW.M
 Injection Date & Time: 7/1/2015 2:09:49 PM 7/1/2015 2:09:49 PM
 Report Creation: 7/1/2015 5:58:34 PM

Sample Name: EV15060188-06 1 ML



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
4.708	FID2 B,	Bromochlorobenzene X	2871.065	223.541
12.236		Pentacosane (conc)	2991.675	77.648

78/

0 < 310 µg/L

REVIEWED BY MB
 & DATE 7/2/15

07.02.17ES



- Seattle/Edmonds (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (503) 542-1080

Chain-of-Custody Record

Date 6/26/15
Page 1 of 1

EV15060188

Project Name	Project Location/Event	Sampler's Name	Project Contact	Send Results To	Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters	Observations/Comments
Closed Yakima LF	Project No. 1148008.030.032	Stephanic Renando, Shane Kostka,	Jeffrey Fellows, Stephanic Renando	J. Fellows, A. Halvorsen, K. Schultze							
					MW-108-062515	6/25/15	1445	AQ	14	Metals Total (Pb, Cr, Ni, Cu, Zn, Cd, Fe, Mn, Mg, Al, Na, Se, Ag, Hg, F, NO ₂ , NO ₃ , Cl, SO ₄) Alkalinity/Carbonate Ammonia/TCO Chlorinated Pesticides PCB VOC2 SVOC PAH TPH-HCID TPH-DX** TPH-G	Allow water samples to settle, collect aliquot from clear portion NWTPH-Dx - run acid wash silica gel cleanup
					FPP-MW-1-062515	6/25/15	1450	AQ	6		
					MW-107-062515	6/25/15	1541	AQ	14		
					MW-103-062515	6/25/15	1630	AQ	14		
					MW-8-062515	6/25/15	1635	AQ	14		
					MW-7-062515	6/25/15	1740	AQ	14		
					TRIP BLANKS			AQ	2		
<p>Note: Samples collected for dissolved metals have been field filtered.</p>											

Special Shipment/Handling or Storage Requirements	ON ICE	Method of Shipment	Delivery
Relinquished by	Signature: <i>[Signature]</i> Printed Name: <u>Stephanic Renando</u> Company: <u>Landau Associates</u> Date: <u>6/26/15</u> Time: <u>1450</u>	Relinquished by	Signature: _____ Printed Name: _____ Company: _____ Date: _____ Time: _____
Received by	Signature: <i>[Signature]</i> Printed Name: <u>Rick Barr</u> Company: <u>ALS</u> Date: <u>6/26/15</u> Time: <u>1456</u>	Received by	Signature: _____ Printed Name: _____ Company: _____ Date: _____ Time: _____

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV1506 0188

Project: Closed Yakima LF / #1148008. 030. 032

Received Date: 6/26/15 Received Time: 14:56 By: [Signature]

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals on outside of sample?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, how many? _____ Where? _____			
Custody seal date: _____ Seal name: _____			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: None

Temperature of cooler upon receipt: 6.8°C, 5.2°C, 3.4°C Cold Cool Ambient N/A
10.6°C all on ice

Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

Data Usability and Validation Reports

TECHNICAL MEMORANDUM

TO: Jeffrey Fellows, Project Manager
FROM: ^{ASH} Anne Halvorsen and ^{KES} Kristi Schultz
DATE: September 10, 2015
RE: **LABORATORY ANALYTICAL DATA USABILITY DETERMINATION
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

INTRODUCTION

This technical memorandum provides an evaluation of the usability of the laboratory analytical data reported for the supplemental remedial investigation conducted at the Closed Yakima Landfill site located in Yakima, Washington. All sample analyses were conducted by ALS Laboratory Group (ALS), at facilities located in Everett and Kelso, Washington.

Soil samples were analyzed for some or all of the following: volatile organic compounds (VOCs) using U.S. Environmental Protection Agency (EPA) Method SW8260; semivolatile organic compounds (SVOCs) using EPA Method SW8270; polycyclic aromatic hydrocarbons (PAHs) using EPA Method SW8270-SIM; polychlorinated biphenyls (PCBs) using EPA Method SW8082; chlorinated pesticides using EPA Method 8081; total petroleum hydrocarbon identification (TPH-HCID) using Washington State Department of Ecology (Ecology)-approved Method NWTPH-HCID; gasoline-range petroleum hydrocarbons (TPH-G) using Method NWTPH-Gx; diesel- and oil-range petroleum hydrocarbons (TPH-D) using Method NWTPH-Dx (with and without silica gel cleanup); total metals using EPA Methods 6020 and 7471; hexavalent chromium using EPA Method 7196; pH using EPA Method 9045; and fluoride, nitrate as N, and nitrite as N using EPA Method 300.0M.

Water samples were analyzed for some or all of the following: VOCs using EPA Method SW8260; low level VOCs (VOC-SIM) using EPA Method SW8260-SIM; SVOCs using EPA Method SW8270; PAHs using EPA Method SW8270-SIM; PCBs using EPA Method SW8082; chlorinated pesticides using EPA Method SW8081; TPH-HCID using Ecology-approved Method NWTPH-HCID; gasoline-range petroleum hydrocarbons (TPH-G) using Method NWTPH-Gx; diesel- and oil-range petroleum hydrocarbons (TPH-D) using Method NWTPH-Dx (with and without silica gel cleanup); total and dissolved metals using EPA Methods 200.8 and 7470; total and dissolved hexavalent chromium using EPA Method 7196; chloride, fluoride, nitrate as N, nitrite as N, and sulfate using EPA Method 300.0; total dissolved solids (TDS) using Method SM2540C; alkalinity as CaCO₃ and bicarbonate as CaCO₃ using Method SM2320B; ammonia as N using EPA Method 350.1; and total organic carbon (TOC) using Method SM5310C.

INTENDED DATA USE

The intended use of the laboratory analytical data is to compare against site-specific screening criteria so that a preferred cleanup action alternative for the Site can be selected and implemented during the feasibility study process.

The review of soil and groundwater sampling results from the supplemental remedial investigation were evaluated for the usability of the data and to determine any limitations on their use in drawing conclusions about the nature and extent of contamination at the Site.

DATA QUALITY OBJECTIVES

The data quality objectives (DQO) for the project specify how good the data must be to meet the objectives of the project and are based on the parameters described below.

PRECISION

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared to their average values. Analytical precision was measured through blank spike/blank spike duplicate (BS/BSD) samples, at a frequency of at least one per sample analysis group. Laboratory precision was evaluated against quantitative relative percent difference (RPD) performance criteria provided by the laboratory.

Field precision was evaluated by the collection of groundwater blind field duplicates at a minimum frequency of 1 per sampling event. No field duplicates were collected for soil samples due to the inherent heterogeneity of the media.

Accuracy

Accuracy is an expression of the degree to which a measured or computed value represents the true value. Field accuracy is controlled by adherence to sample collection procedures as outlined in the Sampling and Analysis Plan.

Analytical accuracy may be assessed by analyzing “spiked” samples with known standards (surrogates, laboratory control samples, and/or matrix spike) and measuring the percent recovery. Accuracy measurements on spiked samples were carried out at a minimum frequency of 1 per laboratory analysis group or 1 in 20 samples per matrix analyzed.

Laboratory accuracy was evaluated against quantitative surrogate spike, blank spike, and surrogate spike recovery performance criteria provided by the laboratory. Control limits for percent recovery for soil

and groundwater samples were laboratory acceptance limits generated according to U.S. Environmental Protection Agency (EPA) guidelines.

Representativeness

Representativeness expresses the degree to which data accurately and precisely represent an actual condition or characteristic of a population. Representativeness can be evaluated using replicate samples, representative sampling locations, and blanks. Representativeness for the supplemental RI sampling was accomplished using appropriate selection of sampling locations for each media of potential concern (soil and groundwater).

Comparability

Comparability expresses the confidence with which one data set can be evaluated in relation to another data set. For this project, comparability of data was established through the use of standard analytical methodologies with detection limits/reporting limits that met screening level criteria to the extent possible, standard reporting formats, and common traceable calibration and reference materials.

Completeness

Completeness is a measure of the proportion of data obtained from a task sampling plan that is determined to be valid. It is calculated as the number of valid data points divided by the total number of data points requested. The QA objective for completeness during this project was 95 percent. Completeness was routinely determined and compared to this control criterion during the course of implementation of the supplemental RI program.

Bias

Bias is the systematic or persistent distortion of a measured process that causes errors in one direction. Bias of the laboratory results was evaluated based on analysis of method blanks.

Sensitivity

Sensitivity is the ability to discern the difference between very small amounts of a substance. For the purposes of this project, sensitivity is the lowest concentration that can be accurately detected by the analytical method. The analytical method was considered sufficiently sensitive as the detection limits or practical quantitation limits were below project screening levels to the extent possible.

Screening Level Adjustments

For select compounds, the project screening level was adjusted upward to the laboratory practical quantitation limit.

For soil analyses, these compounds included the following:

- endosulfan
- 3,3'-dichlorobenzidine
- pentachlorophenol

For groundwater analyses, these compounds included the following:

- total and dissolved arsenic
- total and dissolved mercury
- A-BHC
- B-BHC
- heptachlor
- aldrin
- heptachlor epoxide
- chlordane
- 4,4'-DDE
- dieldrin
- endrin
- 4,4'-DDD
- 4,4'-DDT
- hexachlorobenzene
- aroclor 1016
- aroclor 1254
- acrylonitrile
- 1,2,3-trichloropropane
- 1,2-dibromo-3-chloropropane
- vinyl chloride
- n-nitrosodimethylamine
- bis(2-chloroethyl)ether
- n-nitroso-di-n-propylamine
- hexachloroethane
- 4-chloroaniline
- 2,6-dinitrotoluene
- 2,4-dinitrotoluene
- azobenzene
- 3,3'-dichlorobenzidine
- pentachlorophenol
- benzo(a)anthracene
- chrysene
- benzo(b)fluoranthene
- benzo(k)fluoranthene
- benzo(a)pyrene
- indeno(1,2,3-cd)pyrene
- dibenzo(a,h)anthracene

FINDINGS

Based on the data validation and data quality assessment, the analytical data set completeness was calculated as 100 percent. Of the 21,655 data records collected, none of the data records were rejected.

A number of analytical and/or sampling biases were applied to the data set. These were the result of imprecision between field duplicates, high matrix spike recoveries, low surrogate recoveries, low

BS/BSD recoveries, petroleum hydrocarbon product overlap, and exceeded holding times. Overall, 194 results (0.009%) were qualified as estimated (J, UJ). These data are considered usable and of acceptable quality.

Additional biases were applied due to detections in associated method or trip blank results. Fourteen (14) detected results (0.0006%) were U qualified because of potential contamination. The biases are considered to have no adverse impact on the environmental data quality.

Overall, the dataset satisfies completeness and quality objectives and data can be used for their intended purposes with confidence.

TECHNICAL MEMORANDUM

TO: Jeffrey Fellows, Project Manager
FROM: Anne Halvorsen and Kristi Schultz
DATE: August 13, 2015
RE: **SEPTEMBER 2014 GROUNDWATER SAMPLING LABORATORY DATA VERIFICATION AND VALIDATION
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

This technical memorandum provides the results of verification and validation checks of analytical data for 26 water samples and 1 trip blank collected on September 15-17, 2014 at the Closed Yakima Landfill site located in Yakima, Washington. The samples were collected and analyzed as part of the Closed Yakima Landfill site remedial investigation. All sample analyses were conducted by ALS Laboratory Group (ALS) laboratory, at facilities located in Everett and Kelso, Washington. This data quality evaluation covers ALS data packages EVI4090080, EVI4090091, and EVI4090107.

Water samples were analyzed for some or all of the following: volatile organic compounds (VOCs) using U.S. Environmental Protection Agency (EPA) Method SW8260; semivolatile organic compounds (SVOCs) using EPA Method SW8270; polycyclic aromatic hydrocarbons (PAHs) using EPA Method SW8270-SIM; polychlorinated biphenyls (PCBs) using EPA Method SW8082; chlorinated pesticides using EPA Method SW8081; total petroleum hydrocarbon identification (TPH-HCID) using Washington State Department of Ecology (Ecology)-approved Method NWTPH-HCID; gasoline-range petroleum hydrocarbons (TPH-G) using Method NWTPH-Gx; diesel- and oil-range petroleum hydrocarbons (TPH-D) using Method NWTPH-Dx (with and without silica gel cleanup); total and dissolved metals using EPA Methods 200.8 and 7470; total and dissolved hexavalent chromium using EPA Method 7196; chloride, fluoride, nitrate as N, nitrite as N, and sulfate using EPA Method 300.0; total dissolved solids (TDS) using Method SM2540C; alkalinity as CaCO₃ and bicarbonate as CaCO₃ using Method SM2320B; ammonia as N using EPA Method 350.1; and total organic carbon (TOC) using Method SM5310C. The verification and validation checks were performed on the analytical data associated with these analyses.

The verification and validation checks were conducted in accordance with guidance from applicable portions of the *National Functional Guidelines for Organic Data Review* (EPA 1999, 2008) the *National Functional Guidelines for Inorganic Data Review* (EPA 2004, 2010), and the *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima,*

Washington (Landau Associates 2014). The verification and validation check for each laboratory data package included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).
- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Data validation qualifiers are added to the sample results, as appropriate, based on the verification and validation check. The absence of a data qualifier indicates that the reported result is acceptable without qualification. The data quality evaluation is summarized below. Data validation qualifiers are summarized in Table 1.

LABORATORY DATA PACKAGE COMPLETENESS

Each laboratory data package contained a signed chain-of-custody, a cooler receipt form documenting the condition of the samples upon receipt at the laboratory, a cooler temperature compliance form, sample analytical results, and quality control results (method blanks, surrogate recoveries, laboratory control sample results, and replicate sample results). A case narrative identifying any complications was also provided with each laboratory data package. Definitions of laboratory qualifiers and quality control acceptance criteria were provided, as appropriate.

SAMPLE CONDITIONS AND ANALYSIS

The laboratory received the samples in good condition and all analyses were performed as requested. Upon receipt by ALS, the sample container information was compared to the associated chain-of-custody and the cooler temperatures were recorded. All coolers were received with temperatures below 6.0°C, which is within the EPA-recommended limits of $\leq 6^{\circ}\text{C}$.

HOLDING TIMES

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within EPA and method-specified holding times, with the following exceptions:

- The TDS analyses associated with samples in data package EV13090080 were completed outside the method-recommended hold time. The associated sample results were qualified as estimated (J,UJ), as indicated in Table 1.
- The total and dissolved hexavalent chromium analyses associated with several samples in data package EV13090091 were completed outside the method-recommended hold time (the laboratory noted for several samples that the samples were not received by the laboratory until after the hold time had expired). The associated sample results were qualified as estimated (J,UJ), as indicated in Table 1.
- The nitrate as N and nitrite as N analyses associated with multiple samples in data package EV14090107 were completed outside the method-recommended hold time. The associated sample results were qualified as estimated (J, UJ), as indicated in Table 1.

BLANK RESULTS

Laboratory Method Blanks

At least one method blank was analyzed with each batch of samples. No contamination was detected in any of the method blanks. No qualification of the data was necessary.

Field Trip Blanks

A field trip blank was submitted and analyzed for VOCs and TPH-G in data package EV14090107. No contamination was detected in the trip blank. No qualification of the data was necessary.

SURROGATE RECOVERIES

Appropriate compounds were used as surrogate spikes for the VOC, SVOC, PAH, PCB, pesticide, TPH-HCID, TPH-G, and TPH-D analyses. Recovery values for the surrogate spikes were within the current laboratory-specified control limits for all samples with the following exceptions:

- Recoveries of the surrogates 2,4,6-tribromophenol and terphenyl-d14 associated with the SVOC analysis of sample MW-DUP-2-09162014 in data package EV14090107 exceeded the laboratory-specified control limits. EPA National Functional Guidelines for SVOC sample surrogate qualification require two or more surrogates of the same fraction to be outside laboratory-specified control limits; therefore no qualification of the data was necessary.
- Recoveries of the surrogates 2,4,6-tribromophenol and 2-fluorophenol associated with the SVOC analysis of sample MW-102-09162014 in data package EV14090107 were below the laboratory-specified control limits. The associated sample results were qualified as estimated (UJ), as indicated in Table 1.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD) RESULTS

Two project-specific MS were analyzed with the TOC analyses in data package EV14090107. The recovery values for each required spiking compound were within the laboratory-specified control limits for all project samples. No laboratory duplicates were analyzed. No qualification of the data was necessary.

LABORATORY CONTROL SAMPLE (LCS) AND LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) RESULTS

At least one laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) was analyzed with each batch of samples as required by the method. Recoveries for each LCS and/or LCSD and the RPDs were within the current laboratory-specified control limits, with the following exception:

- The LCS/LCSD recoveries for pyrene associated with the SVOC analysis in data package EV14090107 exceeded the laboratory-specified control limit. Pyrene was not detected in the associated samples; therefore, no qualification of the data was necessary.
- The LCS/LCSD recoveries for PCB-1260 associated with the PCB analysis in data package EV14090107 exceeded the laboratory-specified control limit. PCB-1260 was not detected in the associated samples; therefore, no qualification of the data was necessary.

BLIND FIELD DUPLICATES

Two pairs of blind field duplicate groundwater samples [MW-3-09162014/MW-DUP-1-09162014 and MW-106-09162014/MW-DUP-2-09162014] were submitted for analysis for VOCs, SVOCs, PAHs, PCBs, pesticides, TPH-HCID, total and dissolved metals, total and dissolved hexavalent chromium, chloride, fluoride, nitrate as N, nitrite as N, sulfate, TDS, alkalinity as CaCO₃, bicarbonate as CaCO₃, ammonia as N, and TOC in data packages EV14090091 and EV14090107.

A project-specified control limit of 20 percent was used to evaluate the RPDs between the duplicate water samples, except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. RPDs for the duplicate sample pairs submitted for analysis were within the project-specified control limits with the following exceptions:

- The RPD for fluoride associated with the conventionals analysis for sample pair MW-3-09162014/MW-DUP-1-09162014 in data package EV14090091 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J, UJ), as indicated in Table 1.
- The RPD for nitrate as N associated with the conventionals analysis for sample pair MW-106-09162014/MW-DUP-2-09162014 in data package EV14090091 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.

- The RPDs for 1-methylnaphthalene and 2-methylnaphthalene associated with the PAH analysis for sample pair MW-106-09162014/MW-DUP-2-09162014 in data package EV14090091 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.

INITIAL AND CONTINUING CALIBRATION

Laboratory-specified calibration limits for initial and continuing calibrations were met for all analyses. No qualification of the data was necessary.

ADDITIONAL QUALITY CONTROL ACTION

Additional quality control measures included the following:

- Sample MW-105-091514 was inadvertently analyzed for TDS twice; once within the method-recommended hold time and once outside the method-recommended hold time. As there were no quality issues with either analysis, it was decided to report the original in-hold analysis result without qualification.

COMPLETENESS AND OVERALL DATA QUALITY

The completeness for this data set is 100 percent, which meets the project-specified goal of 95 percent minimum.

Data precision was evaluated through laboratory control sample duplicates and blind field duplicates. Data accuracy was evaluated through matrix spikes, laboratory control samples, and surrogate spikes. Based on this data quality verification and validation, all of the data were determined to be acceptable. No data were rejected.

REFERENCES

EPA. 2010. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA-540-R-10-011. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. January.

EPA. 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*. USEPA-540-R-08-01. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. June.

EPA. 2004. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. EPA 540-R-04-004. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. October.

EPA. 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*. EPA-540/R-99-008. U.S. Environmental Protection Agency. Office of Emergency and Remedial Response. Washington, D.C. October.

Landau Associates. 2014. *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington*. Prepared for the City of Yakima and submitted to the Washington State Department of Ecology. August 11.

TABLE 1
SUMMARY OF DATA QUALIFIERS
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON

Data Package	Analytical Group	Analyte	Result	Qualifier	Sample Number	Reason
EV14090080	Conventionals	Total Dissolved Solids	170	J	MW-9A-091514	Analyzed outside hold time
EV14090080	Conventionals	Total Dissolved Solids	310	J	MW-18-091514	Analyzed outside hold time
EV14090080	Conventionals	Total Dissolved Solids	210	J	MW-11-091514	Analyzed outside hold time
EV14090080	Conventionals	Total Dissolved Solids	230	J	MW-105-091514	Analyzed outside hold time
EV14090080	Conventionals	Total Dissolved Solids	370	J	MW-12-091514	Analyzed outside hold time
EV14090091	Total Metals	Hexavalent Chromium	10 U	UJ	MW-3-09162014	Analyzed outside hold time
EV14090091	Total Metals	Hexavalent Chromium	10 U	UJ	MW-8-09162014	Analyzed outside hold time
EV14090091	Total Metals	Hexavalent Chromium	10 U	UJ	MW-DUP-1-09162014	Analyzed outside hold time
EV14090091	Total Metals	Hexavalent Chromium	10 U	UJ	MW-DUP-2-09162014	Analyzed outside hold time
EV14090091	Dissolved Metals	Hexavalent Chromium	10 U	UJ	MW-3-09162014	Analyzed outside hold time
EV14090091	Dissolved Metals	Hexavalent Chromium	10 U	UJ	MW-8-09162014	Analyzed outside hold time
EV14090091	Dissolved Metals	Hexavalent Chromium	10 U	UJ	MW-DUP-1-09162014	Analyzed outside hold time
EV14090091	Dissolved Metals	Hexavalent Chromium	10 U	UJ	MW-DUP-2-09162014	Analyzed outside hold time
EV14090091	Conventionals	Fluoride	0.33	J	MW-3-09162014	High field duplicate RPD
EV14090091	Conventionals	Fluoride	0.16 U	UJ	MW-DUP-1-09162014	High field duplicate RPD
EV14090091	Conventionals	Nitrate as N	0.043	J	MW-106-09162014	High field duplicate RPD
EV14090091	Conventionals	Nitrate as N	0.12	J	MW-DUP-2-09162014	High field duplicate RPD
EV14090107	Conventionals	Nitrate as N	0.36	J	MW-6-09172014	Analyzed outside hold time
EV14090107	Conventionals	Nitrite as N	0.043 U	UJ	MW-6-09172014	Analyzed outside hold time
EV14090107	Conventionals	Nitrate as N	0.20	J	MW-14-09172014	Analyzed outside hold time
EV14090107	Conventionals	Nitrite as N	0.043 U	UJ	MW-14-09172014	Analyzed outside hold time
EV14090107	Conventionals	Nitrate as N	2.8	J	MW-16-09172014	Analyzed outside hold time
EV14090107	Conventionals	Nitrite as N	0.043 U	UJ	MW-16-09172014	Analyzed outside hold time
EV14090107	Conventionals	Nitrate as N	1.9	J	TP-MW-1-09172014	Analyzed outside hold time
EV14090107	Conventionals	Nitrite as N	0.043 U	UJ	TP-MW-1-09172014	Analyzed outside hold time
EV14090107	Conventionals	Nitrate as N	0.034 U	UJ	TP-MW-2-09172014	Analyzed outside hold time
EV14090107	Conventionals	Nitrite as N	0.043 U	UJ	TP-MW-2-09172014	Analyzed outside hold time
EV14090107	SVOCs	Phenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	2-Chlorophenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	2-Methylphenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	3&4-Methylphenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	2-Nitrophenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	2,4-Dimethylphenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	Benzoic Acid	10 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	2,4-Dichlorophenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	2,6-Dichlorophenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	4-Chloro-3-Methylphenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	2,4,6-Trichlorophenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	2,4,5-Trichlorophenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	2,4-Dinitrophenol	10 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	4-Nitrophenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	2,3,4,6-Tetrachlorophenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	SVOCs	4,6-Dinitro-2-Methylphenol	2.0 U	UJ	MW-102-09162014	Low surrogates recovery
EV14090107	PAHs	2-Methylnaphthalene	0.055	J	MW-106-09162014	High field duplicate RPD
EV14090107	PAHs	2-Methylnaphthalene	0.079	J	MW-DUP-2-09162014	High field duplicate RPD
EV14090107	PAHs	1-Methylnaphthalene	0.080	J	MW-106-09162014	High field duplicate RPD
EV14090107	PAHs	1-Methylnaphthalene	0.12	J	MW-DUP-2-09162014	High field duplicate RPD

Notes

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = Indicates the compound was not detected at the reported concentration.

UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

TECHNICAL MEMORANDUM

TO: Jeffrey Fellows, Project Manager
ASTT *KES*

FROM: Anne Halvorsen and Kristi Schultz

DATE: August 13, 2015

RE: **SEPTEMBER 2014 SOIL SAMPLING LABORATORY DATA VERIFICATION AND
VALIDATION
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

This technical memorandum provides the results of verification and validation checks of analytical data for 17 soil samples collected on September 2-11, 2014 at the Closed Yakima Landfill site located in Yakima, Washington. The samples were collected and analyzed as part of the Closed Yakima Landfill site remedial investigation. All sample analyses were conducted by ALS Laboratory Group (ALS) laboratory, at facilities located in Everett and Kelso, Washington. This data quality evaluation covers ALS data packages EV14090022, EV14090040, EV14090051, and EV14090067.

Soil samples were analyzed for some or all of the following: volatile organic compounds (VOCs) using U.S. Environmental Protection Agency (EPA) Method SW8260; semivolatile organic compounds (SVOCs) using EPA Method SW8270; polycyclic aromatic hydrocarbons (PAHs) using EPA Method SW8270-SIM; polychlorinated biphenyls (PCBs) using EPA Method SW8082; chlorinated pesticides using EPA Method 8081; total petroleum hydrocarbon identification (TPH-HCID) using Washington State Department of Ecology (Ecology)-approved Method NWTPH-HCID; gasoline-range petroleum hydrocarbons (TPH-G) using Method NWTPH-Gx; diesel- and oil-range petroleum hydrocarbons (TPH-D) using Method NWTPH-Dx (with and without silica gel cleanup); total metals using EPA Methods 6020 and 7471; hexavalent chromium using EPA Method 7196; pH using EPA Method 9045; and fluoride, nitrate as N, and nitrite as N using EPA Method 300.0M. The verification and validation checks were performed on the analytical data associated with these analyses.

The verification and validation checks were conducted in accordance with guidance from applicable portions of the *National Functional Guidelines for Organic Data Review* (EPA 1999, 2008) the *National Functional Guidelines for Inorganic Data Review* (EPA 2004, 2010), and the *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington* (Landau Associates 2014). The verification and validation check for each laboratory data package included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at

the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).

- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Data validation qualifiers are added to the sample results, as appropriate, based on the verification and validation check. The absence of a data qualifier indicates that the reported result is acceptable without qualification. The data quality evaluation is summarized below. Data validation qualifiers are summarized in Table 1.

LABORATORY DATA PACKAGE COMPLETENESS

Each laboratory data package contained a signed chain-of-custody, a cooler receipt form documenting the condition of the samples upon receipt at the laboratory, a cooler temperature compliance form, sample analytical results, and quality control results (method blanks, surrogate recoveries, laboratory control sample results, and replicate sample results). A case narrative identifying any complications was also provided with each laboratory data package. Definitions of laboratory qualifiers and quality control acceptance criteria were provided, as appropriate.

SAMPLE CONDITIONS AND ANALYSIS

The laboratory received the samples in good condition and all analyses were performed as requested. Upon receipt by ALS, the sample container information was compared to the associated chain-of-custody and the cooler temperatures were recorded. All coolers were received with temperatures ranging from 1.4°C-5.3°C, which are within the EPA-recommended limits of $\leq 6^{\circ}\text{C}$.

HOLDING TIMES

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within EPA and method-specified holding times, with the following exceptions:

- The nitrate as N and nitrite as N analyses associated with samples in data packages EV14090022, EV14090040, and EV14090051 were completed outside the method-recommended hold time. The associated sample results were qualified as estimated (J, UJ), as indicated in Table 1.

BLANK RESULTS

Laboratory Method Blanks

At least one method blank was analyzed with each batch of samples. No contamination was detected in any of the method blanks. No qualification of the data was necessary.

Field Trip Blanks

No field trip blanks were submitted for analysis with the samples associated with this sampling event.

SURROGATE RECOVERIES

Appropriate compounds were used as surrogate spikes for the VOC, SVOC, PAH, PCB, pesticide, TPH-HCID, TPH-G, and TPH-D analyses. Recovery values for the surrogate spikes were within the current laboratory-specified control limits for all samples with the following exceptions:

- Recovery of surrogate 2,4,6-tribromophenol associated with the PAH analyses for two samples in data package EV14090040 exceeded the laboratory-specified control limits. EPA National Functional Guidelines for SVOC sample surrogate qualification require two or more surrogates of the same fraction to be outside laboratory-specified control limits; therefore no qualification of the data was necessary.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD) RESULTS

A project-specific MS/MSD was analyzed with the PCB and pesticide analyses in data package EV14090067. The recovery values for each required spiking compound were within the laboratory-specified control limits for all project samples. No laboratory duplicates were analyzed. No qualification of the data was necessary.

LABORATORY CONTROL SAMPLE (LCS) AND LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) RESULTS

At least one laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) was analyzed with each batch of samples as required by the method. Recoveries for each LCS and/or LCSD and the RPDs were within the current laboratory-specified control limits. No qualification of the data was necessary.

BLIND FIELD DUPLICATES

No blind field duplicate soil samples were collected during these sampling events.

INITIAL AND CONTINUING CALIBRATION

Laboratory-specified calibration limits for initial and continuing calibrations were met for all analyses. No qualification of the data was necessary.

ADDITIONAL QUALITY CONTROL ACTION

Additional quality control measures noted by the laboratory included the following:

- The diesel results associated with the TPH-D analysis for sample MW-106(2.5-3.5)-090914 were noted by the laboratory as biased high due to an oil-range product overlap. The associated sample results were qualified as estimated (J), as indicated in Table 1.

COMPLETENESS AND OVERALL DATA QUALITY

The completeness for this data set is 100 percent, which meets the project-specified goal of 95 percent minimum.

Data precision was evaluated through laboratory control sample duplicates and matrix spike duplicates. Data accuracy was evaluated through matrix spikes, laboratory control samples, and surrogate spikes. Based on this data quality verification and validation, all of the data were determined to be acceptable. No data were rejected.

REFERENCES

EPA. 2010. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA-540-R-10-011. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. January.

EPA. 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*. USEPA-540-R-08-01. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. June.

EPA. 2004. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. EPA 540-R-04-004. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. October.

EPA. 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*. EPA-540/R-99-008. U.S. Environmental Protection Agency. Office of Emergency and Remedial Response. Washington, D.C. October.

Landau Associates. 2014. *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington*. Prepared for the City of Yakima and submitted to the Washington State Department of Ecology. August 11.

TABLE 1
SUMMARY OF DATA QUALIFIERS
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON

Data Package	Analytical Group	Analyte	Result	Qualifier	Sample Number	Reason
EV14090022	Conventionals	Nitrate as N	63	J	MW-105(2.5-3.5)-090214	Analyzed outside hold time
EV14090022	Conventionals	Nitrite as N	0.50 U	UJ	MW-105(2.5-3.5)-090214	Analyzed outside hold time
EV14090022	Conventionals	Nitrate as N	0.50 U	UJ	MW-105(17.5-19)-090214	Analyzed outside hold time
EV14090022	Conventionals	Nitrite as N	0.50 U	UJ	MW-105(17.5-19)-090214	Analyzed outside hold time
EV14090022	Conventionals	Nitrate as N	0.50 U	UJ	MW-104(2.5-3.5)-090314	Analyzed outside hold time
EV14090022	Conventionals	Nitrite as N	0.50 U	UJ	MW-104(2.5-3.5)-090314	Analyzed outside hold time
EV14090022	Conventionals	Nitrate as N	0.91	J	MW-104(19-20)-090314	Analyzed outside hold time
EV14090022	Conventionals	Nitrite as N	0.50 U	UJ	MW-104(19-20)-090314	Analyzed outside hold time
EV14090040	Conventionals	Nitrate as N	0.50 U	UJ	MW-108(2.5-3.5)-090414	Analyzed outside hold time
EV14090040	Conventionals	Nitrite as N	0.50 U	UJ	MW-108(2.5-3.5)-090414	Analyzed outside hold time
EV14090040	Conventionals	Nitrate as N	0.50 U	UJ	MW-108(21.5-22.5)-090414	Analyzed outside hold time
EV14090040	Conventionals	Nitrite as N	0.50 U	UJ	MW-108(21.5-22.5)-090414	Analyzed outside hold time
EV14090040	Conventionals	Nitrate as N	0.50 U	UJ	MW-103(20.5-21.5)-090514	Analyzed outside hold time
EV14090040	Conventionals	Nitrite as N	0.50 U	UJ	MW-103(20.5-21.5)-090514	Analyzed outside hold time
EV14090040	Conventionals	Nitrate as N	0.50 U	UJ	MW-101(17.5-18.5)-090514	Analyzed outside hold time
EV14090040	Conventionals	Nitrite as N	0.50 U	UJ	MW-101(17.5-18.5)-090514	Analyzed outside hold time
EV14090051	Conventionals	Nitrate as N	0.50 U	UJ	MW-102(4-5)-090814	Analyzed outside hold time
EV14090051	Conventionals	Nitrite as N	0.50 U	UJ	MW-102(4-5)-090814	Analyzed outside hold time
EV14090051	Conventionals	Nitrate as N	0.50 U	UJ	MW-102(15-15.5)-090814	Analyzed outside hold time
EV14090051	Conventionals	Nitrite as N	0.50 U	UJ	MW-102(15-15.5)-090814	Analyzed outside hold time
EV14090051	Conventionals	Nitrate as N	0.50 U	UJ	MW-107(2.5-3.5)-090914	Analyzed outside hold time
EV14090051	Conventionals	Nitrite as N	0.50 U	UJ	MW-107(2.5-3.5)-090914	Analyzed outside hold time
EV14090051	Conventionals	Nitrate as N	0.50 U	UJ	MW-107(16-17)-090914	Analyzed outside hold time
EV14090051	Conventionals	Nitrite as N	0.50 U	UJ	MW-107(16-17)-090914	Analyzed outside hold time
EV14090051	Conventionals	Nitrate as N	15	J	MW-106(2.5-3.5)-090914	Analyzed outside hold time
EV14090051	Conventionals	Nitrite as N	1.7	J	MW-106(2.5-3.5)-090914	Analyzed outside hold time
EV14090051	TPH-Dx	Diesel (with silica gel cleanup)	87	J	MW-106(2.5-3.5)-090914	High bias due to oil range product overlap
EV14090051	TPH-Dx	Diesel (without silica gel cleanup)	150	J	MW-106(2.5-3.5)-090914	High bias due to oil range product overlap

Notes

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = Indicates the compound was not detected at the reported concentration.

UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

TECHNICAL MEMORANDUM

TO: Jeffrey Fellows, Project Manager
FROM: Anne Halvorsen and Kristi Schultz
DATE: August 13, 2015
RE: **OCTOBER 2014 SOIL SAMPLING LABORATORY DATA VERIFICATION AND VALIDATION
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

This technical memorandum provides the results of verification and validation checks of analytical data for 3 soil samples collected on October 29-30, 2014 at the Closed Yakima Landfill site located in Yakima, Washington. The samples were collected and analyzed as part of the Closed Yakima Landfill site remedial investigation. All sample analyses were conducted by ALS Laboratory Group (ALS) laboratory, at facilities located in Everett and Kelso, Washington. This data quality evaluation covers ALS data package EV14100222.

Soil samples were analyzed for some or all of the following: volatile organic compounds (VOCs) using U.S. Environmental Protection Agency (EPA) Method SW8260; semivolatile organic compounds (SVOCs) using EPA Method SW8270; polycyclic aromatic hydrocarbons (PAHs) using EPA Method SW8270-SIM; polychlorinated biphenyls (PCBs) using EPA Method SW8082; chlorinated pesticides using EPA Method 8081; total petroleum hydrocarbon identification (TPH-HCID) using Washington State Department of Ecology (Ecology)-approved Method NWTPH-HCID; diesel- and oil-range petroleum hydrocarbons (TPH-D) using Method NWTPH-Dx (with and without silica gel cleanup); total metals using EPA Methods 6020 and 7471; hexavalent chromium using EPA Method 7196; pH using EPA Method 9045; and fluoride, nitrate as N, and nitrite as N using EPA Method 300.0M. The verification and validation checks were performed on the analytical data associated with these analyses.

The verification and validation checks were conducted in accordance with guidance from applicable portions of the *National Functional Guidelines for Organic Data Review* (EPA 1999, 2008) the *National Functional Guidelines for Inorganic Data Review* (EPA 2004, 2010), and the *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington* (Landau Associates 2014). The verification and validation check for each laboratory data package included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of

extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).

- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Data validation qualifiers are added to the sample results, as appropriate, based on the verification and validation check. The absence of a data qualifier indicates that the reported result is acceptable without qualification. The data quality evaluation is summarized below.

LABORATORY DATA PACKAGE COMPLETENESS

Each laboratory data package contained a signed chain-of-custody, a cooler receipt form documenting the condition of the samples upon receipt at the laboratory, a cooler temperature compliance form, sample analytical results, and quality control results (method blanks, surrogate recoveries, laboratory control sample results, and replicate sample results). A case narrative identifying any complications was also provided with each laboratory data package. Definitions of laboratory qualifiers and quality control acceptance criteria were provided, as appropriate.

SAMPLE CONDITIONS AND ANALYSIS

The laboratory received the samples in good condition and all analyses were performed as requested. Upon receipt by ALS, the sample container information was compared to the associated chain-of-custody and the cooler temperature was recorded. The cooler was received with a temperature of 2.1°C, which is within the EPA-recommended limits of $\leq 6^{\circ}\text{C}$.

HOLDING TIMES

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within EPA and method-specified holding times. No qualification of the data was necessary.

BLANK RESULTS

Laboratory Method Blanks

At least one method blank was analyzed with each batch of samples. No contamination was detected in any of the method blanks. No qualification of the data was necessary.

Field Trip Blanks

No field trip blanks were submitted for analysis with the samples associated with this sampling event.

SURROGATE RECOVERIES

Appropriate compounds were used as surrogate spikes for the VOC, SVOC, PAH, PCB, pesticide, TPH-HCID, and TPH-D analyses. Recovery values for the surrogate spikes were within the current laboratory-specified control limits for all samples. No qualification of the data was necessary.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD) RESULTS

No project-specific MS/MSDs were analyzed with the samples in data package EV14100222. No laboratory duplicates were analyzed. No qualification of the data was necessary.

LABORATORY CONTROL SAMPLE (LCS) AND LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) RESULTS

At least one laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) was analyzed with each batch of samples as required by the method. Recoveries for each LCS and/or LCSD and the RPDs were within the current laboratory-specified control limits. No qualification of the data was necessary.

BLIND FIELD DUPLICATES

No blind field duplicate soil samples were collected during these sampling events.

INITIAL AND CONTINUING CALIBRATION

Laboratory-specified calibration limits for initial and continuing calibrations were met for all analyses. No qualification of the data was necessary.

ADDITIONAL QUALITY CONTROL ACTION

No additional quality control measures were noted by the laboratory. No qualification of the data was necessary.

COMPLETENESS AND OVERALL DATA QUALITY

The completeness for this data set is 100 percent, which meets the project-specified goal of 95 percent minimum.

Data precision was evaluated through laboratory control sample duplicates. Data accuracy was evaluated through laboratory control samples and surrogate spikes. Based on this data quality verification and validation, all of the data were determined to be acceptable. No data were rejected.

REFERENCES

EPA. 2010. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA-540-R-10-011. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. January.

EPA. 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*. USEPA-540-R-08-01. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. June.

EPA. 2004. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. EPA 540-R-04-004. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. October.

EPA. 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*. EPA-540/R-99-008. U.S. Environmental Protection Agency. Office of Emergency and Remedial Response. Washington, D.C. October.

Landau Associates. 2014. *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington*. Prepared for the City of Yakima and submitted to the Washington State Department of Ecology. August 11.

TECHNICAL MEMORANDUM

TO: Jeffrey Fellows, Project Manager
FROM: Anne Halvorsen and Kristi Schultz
DATE: August 13, 2015
RE: **DECEMBER 2014 GROUNDWATER SAMPLING LABORATORY DATA VERIFICATION AND VALIDATION
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

This technical memorandum provides the results of verification and validation checks of analytical data for 45 water samples and 1 trip blank collected on December 16-19, 2014 at the Closed Yakima Landfill site located in Yakima, Washington. The samples were collected and analyzed as part of the Closed Yakima Landfill site remedial investigation. All sample analyses were conducted by ALS Laboratory Group (ALS) laboratory, at facilities located in Everett and Kelso, Washington. This data quality evaluation covers ALS data packages EV14120119, EV14120143, EV14120151, and EV14120162.

Water samples were analyzed for some or all of the following: volatile organic compounds (VOCs) using U.S. Environmental Protection Agency (EPA) Method SW8260; low level VOCs (VOC-SIM) using EPA Method SW8260-SIM; semivolatile organic compounds (SVOCs) using EPA Method SW8270; polycyclic aromatic hydrocarbons (PAHs) using EPA Method SW8270-SIM; polychlorinated biphenyls (PCBs) using EPA Method SW8082; chlorinated pesticides using EPA Method SW8081; total petroleum hydrocarbon identification (TPH-HCID) using Washington State Department of Ecology (Ecology)-approved Method NWTPH-HCID; gasoline-range petroleum hydrocarbons (TPH-G) using Method NWTPH-Gx; diesel- and oil-range petroleum hydrocarbons (TPH-D) using Method NWTPH-Dx (with and without silica gel cleanup); total and dissolved metals using EPA Methods 200.8 and 7470; chloride, fluoride, nitrate as N, nitrite as N, and sulfate using EPA Method 300.0; total dissolved solids (TDS) using Method SM2540C; alkalinity as CaCO₃ and bicarbonate as CaCO₃ using Method SM2320B; ammonia as N using EPA Method 350.1; and total organic carbon (TOC) using Method SM5310C. The verification and validation checks were performed on the analytical data associated with these analyses.

The verification and validation checks were conducted in accordance with guidance from applicable portions of the *National Functional Guidelines for Organic Data Review* (EPA 1999, 2008) the *National Functional Guidelines for Inorganic Data Review* (EPA 2004, 2010), and the *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima,*

Washington (Landau Associates 2014). The verification and validation check for each laboratory data package included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).
- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Data validation qualifiers are added to the sample results, as appropriate, based on the verification and validation check. The absence of a data qualifier indicates that the reported result is acceptable without qualification. The data quality evaluation is summarized below. Data validation qualifiers are summarized in Table 1.

LABORATORY DATA PACKAGE COMPLETENESS

Each laboratory data package contained a signed chain-of-custody, a cooler receipt form documenting the condition of the samples upon receipt at the laboratory, a cooler temperature compliance form, sample analytical results, and quality control results (method blanks, surrogate recoveries, laboratory control sample results, and replicate sample results). A case narrative identifying any complications was also provided with each laboratory data package. Definitions of laboratory qualifiers and quality control acceptance criteria were provided, as appropriate.

SAMPLE CONDITIONS AND ANALYSIS

The laboratory received the samples in good condition and all analyses were performed as requested, with the following exceptions:

- One bottle collected from well MW-108 was broken during transit to the laboratory; the sampling team still at the site was able to collect a replacement sample and shipped it to the laboratory.
- Several analyses for multiple sample locations could not be completed by the laboratory due to limited sample volume; the laboratory contacted Landau Associates for an analytical priority list and completed analyses accordingly.

Upon receipt by ALS, the sample container information was compared to the associated chain-of-custody and the cooler temperatures were recorded. Several coolers were received with temperatures ranging between 1.5°C-5.8°C, which is within the EPA-recommended limits of ≤6°C. Two coolers were received with a temperatures of 6.5°C and 7.3°C, which is slightly above the EPA-recommended limits of ≤6°C. No qualification was determined necessary due to the slightly high cooler temperature.

HOLDING TIMES

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within EPA and method-specified holding times. No qualification of the data was necessary.

BLANK RESULTS

Laboratory Method Blanks

At least one method blank was analyzed with each batch of samples. No contamination was detected in any of the method blanks. No qualification of the data was necessary.

Field Trip Blanks

A field trip blank was submitted and analyzed for VOCs, VOC-SIM, and TPH-G in data package EV14120162. No contamination was detected in the trip blank. No qualification of the data was necessary.

SURROGATE RECOVERIES

Appropriate compounds were used as surrogate spikes for the VOC, VOC-SIM, SVOC, PAH, PCB, pesticide, TPH-HCID, TPH-G, and TPH-D analyses. Recovery values for the surrogate spikes were within the current laboratory-specified control limits for all samples with the following exceptions:

- Recoveries of the surrogates 2-fluorophenol associated with the SVOC analysis of sample MW-DUP1-12192014 and 2-fluorophenol and nitrobenzene-d5 associated with sample MW-101-121814 in data package EV14120162 were below the laboratory-specified control limits. EPA National Functional Guidelines for SVOC sample surrogate qualification require two or more surrogates of the same fraction to be outside laboratory-specified control limits; therefore no qualification of the data was necessary.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD) RESULTS

No project-specific MS/MSDs were analyzed with the samples in the above-mentioned data packages. No laboratory duplicates were analyzed. No qualification of the data was necessary.

LABORATORY CONTROL SAMPLE (LCS) AND LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) RESULTS

At least one laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) was analyzed with each batch of samples as required by the method. Recoveries for each LCS and/or LCSD and the RPDs were within the current laboratory-specified control limits. No qualification of the data was necessary.

BLIND FIELD DUPLICATES

Two pairs of blind field duplicate groundwater samples [MW-106-12192014/MW-DUP1-12192014 and FPP-MW-3-12182014/MW-DUP2-12182014] were submitted for analysis for VOCs, VOC-SIM, SVOCs, PAHs, PCBs, pesticides, TPH-HCID, TPH-D, total and dissolved metals, chloride, fluoride, nitrate as N, nitrite as N, sulfate, TDS, alkalinity as CaCO₃, bicarbonate as CaCO₃, ammonia as N, and TOC in data packages EV14120151 and EV14120162.

A project-specified control limit of 20 percent was used to evaluate the RPDs between the duplicate water samples, except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. RPDs for the duplicate sample pairs submitted for analysis were within the project-specified control limits with the following exceptions:

- The RPD for fluoride associated with the conventionals analysis for sample pair FPP-MW-3-12182014/MW-DUP2-12182014 in data package EV14120151 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J, UJ), as indicated in Table 1.
- The RPD for acenaphthene associated with the PAH analysis for sample pair MW-106-12192014/MW-DUP1-12192014 in data package EV14120162 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.
- The RPD for bis(2-ethylhexyl)phthalate associated with the SVOC analysis for sample pair MW-106-12192014/MW-DUP1-12192014 in data package EV14120162 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.
- The RPD for PCB-1242 associated with the PCB analysis for sample pair MW-106-12192014/MW-DUP1-12192014 in data package EV14120162 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.
- The RPD for ammonia associated with the conventionals analysis for sample pair FPP-MW-3-12182014/MW-DUP2-12182014 in data package EV14120162 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.
- The RPD for total arsenic associated with the metals analysis for sample pair FPP-MW-3-12182014/MW-DUP2-12182014 in data package EV14120162 exceeded the project-

specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.

INITIAL AND CONTINUING CALIBRATION

Laboratory-specified calibration limits for initial and continuing calibrations were met for all analyses. No qualification of the data was necessary.

ADDITIONAL QUALITY CONTROL ACTION

Additional quality control measures reported by the laboratory included the following:

- The oil-range petroleum hydrocarbon results reported for sample FPP-MW-1-121914 were biased high due to a diesel-range product overlap. Associated results were qualified as estimated (J), as indicated in Table 1.
- The diesel-range petroleum hydrocarbon results reported for sample MW-12-121814 were biased high due to an oil-range product overlap. Associated results were qualified as estimated (J), as indicated in Table 1.

COMPLETENESS AND OVERALL DATA QUALITY

The completeness for this data set is 100 percent, which meets the project-specified goal of 95 percent minimum.

Data precision was evaluated through laboratory control sample duplicates and blind field duplicates. Data accuracy was evaluated through laboratory control samples and surrogate spikes. Based on this data quality verification and validation, all of the data were determined to be acceptable. No data were rejected.

REFERENCES

EPA. 2010. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA-540-R-10-011. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. January.

EPA. 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*. USEPA-540-R-08-01. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. June.

EPA. 2004. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. EPA 540-R-04-004. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. October.

EPA. 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*. EPA-540/R-99-008. U.S. Environmental Protection Agency. Office of Emergency and Remedial Response. Washington, D.C. October.

Landau Associates. 2014. *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington*. Prepared for the City of Yakima and submitted to the Washington State Department of Ecology. August 11.

**TABLE 1
SUMMARY OF DATA QUALIFIERS
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

Data Package	Analytical Group	Analyte	Result	Qualifier	Sample Number	Reason
EV14120151	Conventionals	Fluoride	0.50	J	FPP-MW-3-121814	High field duplicate RPD
EV14120151	Conventionals	Fluoride	0.17	J	MW-DUP2-121814	High field duplicate RPD
EV14120162	TPH-Dx	Oil (w/SGC)	260	J	FPP-MW-1-121914	High bias due to diesel range product overlap
EV14120162	TPH-Dx	Oil (w/o SGC)	1000	J	FPP-MW-1-121914	High bias due to diesel range product overlap
EV14120162	TPH-Dx	Diesel (w/SGC)	390	J	MW-12-121814	High bias due to oil range product overlap
EV14120162	TPH-Dx	Diesel (w/o SGC)	990	J	MW-12-121814	High bias due to oil range product overlap
EV14120162	PAHs	Acenaphthene	0.13	J	MW-106-121914	High field duplicate RPD
EV14120162	PAHs	Acenaphthene	0.10	J	MW-DUP1-121914	High field duplicate RPD
EV14120162	SVOCs	bis(2-ethyhexyl)phthalate	60	J	MW-106-121914	High field duplicate RPD
EV14120162	SVOCs	bis(2-ethyhexyl)phthalate	81	J	MW-DUP1-121914	High field duplicate RPD
EV14120162	PCBs	PCB-1242	0.023	J	MW-106-121914	High field duplicate RPD
EV14120162	PCBs	PCB-1242	0.017	J	MW-DUP1-121914	High field duplicate RPD
EV14120162	Conventionals	Ammonia	0.27	J	FPP-MW-3-121814	High field duplicate RPD
EV14120162	Conventionals	Ammonia	0.62	J	MW-DUP2-121814	High field duplicate RPD
EV14120162	Total Metals	Arsenic	0.45 U	UJ	FPP-MW-3-121814	High field duplicate RPD
EV14120162	Total Metals	Arsenic	1.2	J	MW-DUP2-121814	High field duplicate RPD

Notes

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = Indicates the compound was not detected at the reported concentration.

UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

TECHNICAL MEMORANDUM

TO: Jeffrey Fellows, Project Manager
FROM: Anne Halvorsen and Kristi Schultz
DATE: August 13, 2015
RE: **MARCH 2015 GROUNDWATER SAMPLING LABORATORY DATA VERIFICATION AND VALIDATION
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

This technical memorandum provides the results of verification and validation checks of analytical data for 30 water samples and 5 trip blanks collected on March 23-26, 2015 at the Closed Yakima Landfill site located in Yakima, Washington. The samples were collected and analyzed as part of the Closed Yakima Landfill site remedial investigation. All sample analyses were conducted by ALS Laboratory Group (ALS) laboratory, at facilities located in Everett and Kelso, Washington. This data quality evaluation covers ALS data packages EV15030127, EV15030143, EV15030154, and EV15030162.

Water samples were analyzed for some or all of the following: volatile organic compounds (VOCs) using U.S. Environmental Protection Agency (EPA) Method SW8260; low level VOCs (VOC-SIM) using EPA Method SW8260-SIM; semivolatile organic compounds (SVOCs) using EPA Method SW8270; polycyclic aromatic hydrocarbons (PAHs) using EPA Method SW8270-SIM; polychlorinated biphenyls (PCBs) using EPA Method SW8082; chlorinated pesticides using EPA Method SW8081; total petroleum hydrocarbon identification (TPH-HCID) using Washington State Department of Ecology (Ecology)-approved Method NWTPH-HCID; diesel- and oil-range petroleum hydrocarbons (TPH-D) using Method NWTPH-Dx (with and without silica gel cleanup); total and dissolved metals using EPA Methods 200.8 and 7470; chloride, fluoride, nitrate as N, nitrite as N, and sulfate using EPA Method 300.0; total dissolved solids (TDS) using Method SM2540C; alkalinity as CaCO₃ and bicarbonate as CaCO₃ using Method SM2320B; ammonia as N using EPA Method 350.1; and total organic carbon (TOC) using Method SM5310C. The verification and validation checks were performed on the analytical data associated with these analyses.

The verification and validation checks were conducted in accordance with guidance from applicable portions of the *National Functional Guidelines for Organic Data Review* (EPA 1999, 2008) the *National Functional Guidelines for Inorganic Data Review* (EPA 2004, 2010), and the *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima,*

Washington (Landau Associates 2014). The verification and validation check for each laboratory data package included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).
- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Data validation qualifiers are added to the sample results, as appropriate, based on the verification and validation check. The absence of a data qualifier indicates that the reported result is acceptable without qualification. The data quality evaluation is summarized below. Data validation qualifiers are summarized in Table 1.

LABORATORY DATA PACKAGE COMPLETENESS

Each laboratory data package contained a signed chain-of-custody, a cooler receipt form documenting the condition of the samples upon receipt at the laboratory, a cooler temperature compliance form, sample analytical results, and quality control results (method blanks, surrogate recoveries, laboratory control sample results, and replicate sample results). A case narrative identifying any complications was also provided with each laboratory data package. Definitions of laboratory qualifiers and quality control acceptance criteria were provided, as appropriate.

SAMPLE CONDITIONS AND ANALYSIS

The laboratory received the samples in good condition and all analyses were performed as requested, with the following exceptions:

- Bottles collected from wells MW-12 and MW-103 for TPH-D analysis were broken during transit to the laboratory (data package EV15030143). The laboratory had additional excess sample from other sample bottles from MW-12 to replace the lost sample amount. The sampling team still at the site was able to collect a replacement sample for MW-103 and shipped it to the laboratory; however, the sample was ultimately not analyzed due to the non-detected concentrations of total petroleum hydrocarbons in the TPH-HCID analysis.
- Four of the poly bottles received as part of the sample delivery group for data package EV15030143 had broken caps, which were replaced by the laboratory. The laboratory also

noted that the metals bottles received for MW-105 did not indicate which was field-filtered and intended for dissolved metals analysis; the laboratory chose the sample bottle that was clearest in appearance and designated it as the filtered sample.

- Due to a shipping delay between the laboratory's Everett and Kelso facilities, three samples were analyzed for pesticides outside the method-recommended hold time (data package EV15030154, samples FPP-MW-3-032615, MW-11-032615, and MW-18-032615).

Upon receipt by ALS, the sample container information was compared to the associated chain-of-custody and the cooler temperatures were recorded. All coolers were received with temperatures ranging between 0.8°C-5.1°C, which is within the EPA-recommended limits of $\leq 6^{\circ}\text{C}$. No qualification of the data was necessary.

HOLDING TIMES

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within EPA and method-specified holding times, with the following exception:

- Due to a shipping delay between the laboratory's Everett and Kelso facilities, three samples were analyzed for pesticides outside the method-recommended hold time (data package EV15030154, samples FPP-MW-3-032615, MW-11-032615, and MW-18-032615). The associated sample results were qualified as estimated (J, UJ), as indicated in Table 1.

BLANK RESULTS

Laboratory Method Blanks

At least one method blank was analyzed with each batch of samples. No contamination was detected in any of the method blanks. No qualification of the data was necessary.

Field Trip Blanks

Field trip blanks were submitted and analyzed for VOCs and VOC-SIM in data packages EV15030127, EV15030143, EV15030154, and EV15030162. No contamination was detected in the trip blanks. No qualification of the data was necessary.

SURROGATE RECOVERIES

Appropriate compounds were used as surrogate spikes for the VOC, VOC-SIM, SVOC, PAH, PCB, pesticide, TPH-HCID, and TPH-D analyses. Recovery values for the surrogate spikes were within the current laboratory-specified control limits for all samples with the following exceptions:

- Recoveries of the surrogate 2,4,6-tribromophenol associated with the SVOC analysis of several samples in data packages EV15030143 and EV15030154 exceeded the laboratory-specified control limits. EPA National Functional Guidelines for SVOC sample surrogate

qualification require two or more surrogates of the same fraction to be outside laboratory-specified control limits; therefore no qualification of the data was necessary.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD) RESULTS

Project-specific MS or MS/MSDs were analyzed for TOC and ammonia with select samples in data packages EV15030127, EV15030143, EV15030154, and EV15030162. No laboratory duplicates were analyzed. The recovery values for each required spiking compound were within the laboratory-specified control limits for all project samples, with the following exception:

- The MS/MSD recoveries for ammonia associated with the conventional analysis of sample MW-7-032615 in data package EV15030162 exceeded the laboratory-specified control limit. The associated sample result were qualified as estimated (J), as indicated in Table 1.

LABORATORY CONTROL SAMPLE (LCS) AND LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) RESULTS

At least one laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) was analyzed with each batch of samples as required by the method. Recoveries for each LCS and/or LCSD and the RPDs were within the current laboratory-specified control limits, with the following exceptions:

- The LCS and/or LCSD recovery for n-nitroso-di-n-propylamine associated with the SVOC analyses in data packages EV15030127, EV15030154, and EV15030162 exceeded the laboratory-specified control limit. N-nitroso-di-n-propylamine was not detected in the associated samples; therefore, no qualification of the data was necessary.
- The LCS and/or LCSD recovery for Aroclor 1260 associated with the PCB analyses in data packages EV15030127, EV15030143, EV15030154, and EV15030162 exceeded the laboratory-specified control limit. Aroclor 1260 was not detected in the associated samples; therefore, no qualification of the data was necessary.

BLIND FIELD DUPLICATES

Two pairs of blind field duplicate groundwater samples [MW-106-032415/MW-DUP1-032415 and FPP-MW-3-032615/DUP2-032615] were submitted for analysis for VOCs, VOC-SIM, SVOCs, PAHs, PCBs, pesticides, TPH-HCID, TPH-D, total and dissolved metals, chloride, fluoride, nitrate as N, nitrite as N, sulfate, TDS, alkalinity as CaCO₃, bicarbonate as CaCO₃, ammonia as N, and TOC in data packages EV15030127 and EV15030154.

A project-specified control limit of 20 percent was used to evaluate the RPDs between the duplicate water samples, except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. RPDs for the duplicate sample pairs submitted for analysis were within the project-specified control limits with the following exceptions:

- The RPDs for naphthalene and acenaphthene associated with the PAHs analysis for sample pair MW-106-032415/MW-DUP1-032415 in data package EV15030127 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.
- The RPD for naphthalene associated with the PAHs analysis for sample pair FPP-MW-3-032615/DUP2-032615 in data package EV15030154 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.
- The RPDs for total and dissolved arsenic associated with the metals analysis for sample pair FPP-MW-3-032615/DUP2-032615 in data package EV15030154 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J, UJ), as indicated in Table 1.

INITIAL AND CONTINUING CALIBRATION

Laboratory-specified calibration limits for initial and continuing calibrations were met for all analyses. No qualification of the data was necessary.

ADDITIONAL QUALITY CONTROL ACTION

Additional quality control measures reported by the laboratory included the following:

- The diesel-range petroleum hydrocarbon results reported for samples MW-12-032515 in data package EV15030143 and FPP-MW-2-032615 in data package EV15030154 were biased high due to an oil-range product overlap. Associated results were qualified as estimated (J), as indicated in Table 1.

COMPLETENESS AND OVERALL DATA QUALITY

The completeness for this data set is 100 percent, which meets the project-specified goal of 95 percent minimum.

Data precision was evaluated through matrix spike duplicates, laboratory control sample duplicates, and blind field duplicates. Data accuracy was evaluated through matrix spikes, laboratory control samples, and surrogate spikes. Based on this data quality verification and validation, all of the data were determined to be acceptable. No data were rejected.

REFERENCES

EPA. 2010. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA-540-R-10-011. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. January.

EPA. 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*. USEPA-540-R-08-01. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. June.

EPA. 2004. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. EPA 540-R-04-004. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. October.

EPA. 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*. EPA-540/R-99-008. U.S. Environmental Protection Agency. Office of Emergency and Remedial Response. Washington, D.C. October.

Landau Associates. 2014. *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington*. Prepared for the City of Yakima and submitted to the Washington State Department of Ecology. August 11.

TABLE 1
SUMMARY OF DATA QUALIFIERS
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON

Data Package	Analytical Group	Analyte	Result	Qualifier	Sample Number	Reason
EV15030127	PAHs	Naphthalene	0.080	J	MW-106-032415	High field duplicate RPD
EV15030127	PAHs	Naphthalene	0.039	J	DUP-1-032415	High field duplicate RPD
EV15030127	PAHs	Acenaphthene	0.13	J	MW-106-032415	High field duplicate RPD
EV15030127	PAHs	Acenaphthene	0.10	J	DUP-1-032415	High field duplicate RPD
EV15030143	TPH-Dx	Diesel (w/SGA)	310	J	MW-12-032515	High bias due to oil range product overlap
EV15030154	TPH-Dx	Diesel (w/SGA)	220	J	FPP-MW-2-032615	High bias due to oil range product overlap
EV15030154	TPH-Dx	Diesel (wo/SGA)	940	J	FPP-MW-2-032615	High bias due to oil range product overlap
EV15030154	PAHs	Naphthalene	0.014 U	UJ	FPP-MW-3-032615	High field duplicate RPD
EV15030154	PAHs	Naphthalene	0.089	J	DUP-2-032615	High field duplicate RPD
EV15030154	Total Metals	Arsenic	1.0	J	FPP-MW-3-032615	High field duplicate RPD
EV15030154	Total Metals	Arsenic	0.45 U	UJ	DUP-2-032615	High field duplicate RPD
EV15030154	Dissolved Metals	Arsenic	1.0	J	FPP-MW-3-032615	High field duplicate RPD
EV15030154	Dissolved Metals	Arsenic	0.45 U	UJ	DUP-2-032615	High field duplicate RPD
EV15030154	Pesticides	ALL Pesticides	ALL	J, UJ	FPP-MW-3-032615	Analyzed outside hold time
EV15030154	Pesticides	ALL Pesticides	ALL	J, UJ	MW-11-032615	Analyzed outside hold time
EV15030154	Pesticides	ALL Pesticides	ALL	J, UJ	MW-18-032615	Analyzed outside hold time
EV15030162	Conventionals	Ammonia	4.1	J	MW-7-032615	High MS/MSD recovery

Notes

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = Indicates the compound was not detected at the reported concentration.

UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

TECHNICAL MEMORANDUM

TO: Jeffrey Fellows, Project Manager
FROM: Anne Halvorsen and Kristi Schultz
DATE: August 13, 2015
RE: APRIL 2015 SOIL SAMPLING LABORATORY DATA VERIFICATION AND VALIDATION
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON

This technical memorandum provides the results of verification and validation checks of analytical data for 5 soil samples collected on April 22-24, 2014 at the Closed Yakima Landfill site located in Yakima, Washington. The samples were collected and analyzed as part of the Closed Yakima Landfill site remedial investigation. All sample analyses were conducted by ALS Laboratory Group (ALS) laboratory, at facilities located in Everett and Kelso, Washington. This data quality evaluation covers ALS data package EV1504134.

Soil samples were analyzed for some or all of the following: volatile organic compounds (VOCs) using U.S. Environmental Protection Agency (EPA) Method SW8260; semivolatile organic compounds (SVOCs) using EPA Method SW8270; polycyclic aromatic hydrocarbons (PAHs) using EPA Method SW8270-SIM; polychlorinated biphenyls (PCBs) using EPA Method SW8082; chlorinated pesticides using EPA Method 8081; total petroleum hydrocarbon identification (TPH-HCID) using Washington State Department of Ecology (Ecology)-approved Method NWTPH-HCID; diesel- and oil-range petroleum hydrocarbons (TPH-D) using Method NWTPH-Dx (with and without silica gel cleanup); total metals using EPA Methods 6020 and 7471; pH using EPA Method 9045; and fluoride, nitrate as N, and nitrite as N using EPA Method 300.0M. The verification and validation checks were performed on the analytical data associated with these analyses.

The verification and validation checks were conducted in accordance with guidance from applicable portions of the *National Functional Guidelines for Organic Data Review* (EPA 1999, 2008) the *National Functional Guidelines for Inorganic Data Review* (EPA 2004, 2010), and the *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington* (Landau Associates 2014). The verification and validation check for each laboratory data package included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of

extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).

- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Data validation qualifiers are added to the sample results, as appropriate, based on the verification and validation check. The absence of a data qualifier indicates that the reported result is acceptable without qualification. The data quality evaluation is summarized below. Data validation qualifiers are summarized in Table 1.

LABORATORY DATA PACKAGE COMPLETENESS

Each laboratory data package contained a signed chain-of-custody, a cooler receipt form documenting the condition of the samples upon receipt at the laboratory, a cooler temperature compliance form, sample analytical results, and quality control results (method blanks, surrogate recoveries, laboratory control sample results, and replicate sample results). A case narrative identifying any complications was also provided with each laboratory data package. Definitions of laboratory qualifiers and quality control acceptance criteria were provided, as appropriate.

SAMPLE CONDITIONS AND ANALYSIS

The laboratory received the samples in good condition and all analyses were performed as requested. Upon receipt by ALS, the sample container information was compared to the associated chain-of-custody and the cooler temperature was recorded. The cooler was received with a temperature of 7.2°C, which is slightly above the EPA-recommended limits of $\leq 6^{\circ}\text{C}$. No qualification was determined necessary due to the slightly high cooler temperature.

HOLDING TIMES

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within EPA and method-specified holding times. No qualification of the data was necessary.

BLANK RESULTS

Laboratory Method Blanks

At least one method blank was analyzed with each batch of samples. No contamination was detected in any of the method blanks. No qualification of the data was necessary.

Field Trip Blanks

No field trip blanks were submitted for analysis with the samples associated with this sampling event.

SURROGATE RECOVERIES

Appropriate compounds were used as surrogate spikes for the VOC, SVOC, PAH, PCB, pesticide, TPH-HCID, and TPH-D analyses. Recovery values for the surrogate spikes were within the current laboratory-specified control limits for all samples. No qualification of the data was necessary.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD) RESULTS

No project-specific MS/MSDs were analyzed with the samples in data package EV15040134. No laboratory duplicates were analyzed. No qualification of the data was necessary.

LABORATORY CONTROL SAMPLE (LCS) AND LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) RESULTS

At least one laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) was analyzed with each batch of samples as required by the method. Recoveries for each LCS and/or LCSD and the RPDs were within the current laboratory-specified control limits with the following exception:

- The LCS/LCSD recoveries for 2-chlorophenol associated with the SVOC analysis were below the laboratory-specified control limit; the laboratory noted the spike recoveries were outside control limits due to sporadic marginal failure and that all other spikes in the extraction fraction were within control limits. The associated sample results were qualified as estimated (UJ), as indicated in Table 1.

BLIND FIELD DUPLICATES

No blind field duplicate soil samples were collected during these sampling events.

INITIAL AND CONTINUING CALIBRATION

Laboratory-specified calibration limits for initial and continuing calibrations were met for all analyses. No qualification of the data was necessary.

ADDITIONAL QUALITY CONTROL ACTION

No additional quality control measures were noted by the laboratory. No qualification of the data was necessary.

COMPLETENESS AND OVERALL DATA QUALITY

The completeness for this data set is 100 percent, which meets the project-specified goal of 95 percent minimum.

Data precision was evaluated through laboratory control sample duplicates. Data accuracy was evaluated through laboratory control samples and surrogate spikes. Based on this data quality verification and validation, all of the data were determined to be acceptable. No data were rejected.

REFERENCES

EPA. 2010. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA-540-R-10-011. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. January.

EPA. 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*. USEPA-540-R-08-01. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. June.

EPA. 2004. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. EPA 540-R-04-004. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. October.

EPA. 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*. EPA-540/R-99-008. U.S. Environmental Protection Agency. Office of Emergency and Remedial Response. Washington, D.C. October.

Landau Associates. 2014. *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington*. Prepared for the City of Yakima and submitted to the Washington State Department of Ecology. August 11.

TABLE 1
SUMMARY OF DATA QUALIFIERS
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON

Data Package	Analytical Group	Analyte	Result	Qualifier	Sample Number	Reason
EV15040134	SVOCs	2-Chlorophenol	250 U	UJ	GP-31(6.5-7.5)-04222015	Low LCS/LCSD recovery
EV15040134	SVOCs	2-Chlorophenol	250 U	UJ	GP-27(5.5-6.5)-04232015	Low LCS/LCSD recovery
EV15040134	SVOCs	2-Chlorophenol	250 U	UJ	GP-28(6.5-7.5)-04232015	Low LCS/LCSD recovery
EV15040134	SVOCs	2-Chlorophenol	250 U	UJ	GP-29(8.0-9.0)-04232015	Low LCS/LCSD recovery
EV15040134	SVOCs	2-Chlorophenol	250 U	UJ	GP-30(8.0-8.5)-04242015	Low LCS/LCSD recovery

Notes

U = Indicates the compound was not detected at the reported concentration.

UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

TECHNICAL MEMORANDUM

TO: Jeffrey Fellows, Project Manager
ASH

FROM: Anne Halvorsen and Kristi Schultz
KES

DATE: August 13, 2015

RE: **JUNE 2015 GROUNDWATER SAMPLING LABORATORY DATA VERIFICATION AND VALIDATION
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON**

This technical memorandum provides the results of verification and validation checks of analytical data for 28 water samples and 3 trip blanks collected on June 23-25, 2015 at the Closed Yakima Landfill site located in Yakima, Washington. The samples were collected and analyzed as part of the Closed Yakima Landfill site remedial investigation. All sample analyses were conducted by ALS Laboratory Group (ALS) laboratory, at facilities located in Everett and Kelso, Washington. This data quality evaluation covers ALS data packages EV15060161, EV15060175, EV15060181, and EV15060188.

Water samples were analyzed for some or all of the following: volatile organic compounds (VOCs) using U.S. Environmental Protection Agency (EPA) Method SW8260; low level VOCs (VOC-SIM) using EPA Method SW8260-SIM; semivolatile organic compounds (SVOCs) using EPA Method SW8270; polycyclic aromatic hydrocarbons (PAHs) using EPA Method SW8270-SIM; polychlorinated biphenyls (PCBs) using EPA Method SW8082; chlorinated pesticides using EPA Method SW8081; total petroleum hydrocarbon identification (TPH-HCID) using Washington State Department of Ecology (Ecology)-approved Method NWTPH-HCID; diesel- and oil-range petroleum hydrocarbons (TPH-D) using Method NWTPH-Dx (with and without silica gel cleanup); total and dissolved metals using EPA Methods 200.8 and 7470; chloride, fluoride, nitrate as N, nitrite as N, and sulfate using EPA Method 300.0; total dissolved solids (TDS) using Method SM2540C; alkalinity as CaCO₃ and bicarbonate as CaCO₃ using Method SM2320B; ammonia as N using EPA Method 350.1; and total organic carbon (TOC) using Method SM5310C. The verification and validation checks were performed on the analytical data associated with these analyses.

The verification and validation checks were conducted in accordance with guidance from applicable portions of the *National Functional Guidelines for Organic Data Review* (EPA 1999, 2008) the *National Functional Guidelines for Inorganic Data Review* (EPA 2004, 2010), and the *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima,*

Washington (Landau Associates 2014). The verification and validation check for each laboratory data package included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).
- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Data validation qualifiers are added to the sample results, as appropriate, based on the verification and validation check. The absence of a data qualifier indicates that the reported result is acceptable without qualification. The data quality evaluation is summarized below. Data validation qualifiers are summarized in Table 1.

LABORATORY DATA PACKAGE COMPLETENESS

Each laboratory data package contained a signed chain-of-custody, a cooler receipt form documenting the condition of the samples upon receipt at the laboratory, a cooler temperature compliance form, sample analytical results, and quality control results (method blanks, surrogate recoveries, laboratory control sample results, and replicate sample results). A case narrative identifying any complications was also provided with each laboratory data package. Definitions of laboratory qualifiers and quality control acceptance criteria were provided, as appropriate.

SAMPLE CONDITIONS AND ANALYSIS

The laboratory received the samples in good condition and all analyses were performed as requested. Upon receipt by ALS, the sample container information was compared to the associated chain-of-custody and the cooler temperatures were recorded. Several coolers were received with temperatures ranging between 1.2°C-5.2°C, which is within the EPA-recommended limits of $\leq 6^{\circ}\text{C}$. Three coolers were received with temperatures between 6.8°C and 10.6°C, which is above the EPA-recommended limits of $\leq 6^{\circ}\text{C}$. No qualification was determined necessary due to the high cooler temperatures.

HOLDING TIMES

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within EPA and method-specified holding times. No qualification of the data was necessary.

BLANK RESULTS

Laboratory Method Blanks

At least one method blank was analyzed with each batch of samples. No contamination was detected in any of the method blanks, with the following exceptions:

- Calcium was detected in the method blanks associated with the total and dissolved metals analyses in data packages EV15060161 and EV15060188. The detected concentrations in the associated samples exceeded the associated action level¹; therefore, no qualification of the data was necessary.
- Arsenic, calcium, and lead were detected in the method blanks associated with the total metals analysis in data packages EV15060175 and EV15060181. Detected concentrations in the associated samples that were below the associated action level were qualified as non-detected (U), as indicated in Table 1.

Field Trip Blanks

Field trip blanks were submitted and analyzed for VOCs and VOC-SIM in data packages EV15060161, EV15060181, and EV15060188. No contamination was detected in the trip blanks. No qualification of the data was necessary.

SURROGATE RECOVERIES

Appropriate compounds were used as surrogate spikes for the VOC, VOC-SIM, SVOC, PAH, PCB, pesticide, TPH-HCID, and TPH-D analyses. Recovery values for the surrogate spikes were within the current laboratory-specified control limits for all samples with the following exceptions:

- Recoveries of the surrogate 2-fluorobiphenyl associated with the SVOC analysis of several samples in data packages EV15060161, EV15060175, EV15060181, and EV15060188 exceeded or fell below the laboratory-specified control limits. EPA National Functional Guidelines for SVOC sample surrogate qualification require two or more surrogates of the same fraction to be outside laboratory-specified control limits; therefore no qualification of the data was necessary.
- Recoveries of surrogates nitrobenzene-d5 and terphenyl-d14 associated with the SVOC analyses of samples MW-106-062515 in data package EV15060181 and MW-7-062515 in data package EV15060188 fell below the laboratory-specified control limits. The associated base/neutral fraction sample results were qualified as estimated (UJ), as indicated in Table 1.

¹ The action level is defined as 10 times the concentration in the method blank for common volatile laboratory contaminants (methylene chloride, acetone, 2-butanone, and cyclohexane), and 5 times the concentration for other target compounds (EPA 1999).

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD) RESULTS

Project-specific MS or MS/MSDs were analyzed for TOC and ammonia with select samples in data packages EV15060161, EV15060175, EV15060181, and EV15060188. No laboratory duplicates were analyzed. The recovery values for each required spiking compound were within the laboratory-specified control limits for all project samples. No qualification of the data was necessary.

LABORATORY CONTROL SAMPLE (LCS) AND LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) RESULTS

At least one laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) was analyzed with each batch of samples as required by the method. Recoveries for each LCS and/or LCSD and the RPDs were within the current laboratory-specified control limits. No qualification of the data was necessary.

BLIND FIELD DUPLICATES

Two pairs of blind field duplicate groundwater samples [MW-106-062515/DUP1-062515 and FPP-MW-3-062415/DUP2-062415] were submitted for analysis for VOCs, VOC-SIM, SVOCs, PAHs, PCBs, pesticides, TPH-HCID, TPH-D, total and dissolved metals, chloride, fluoride, nitrate as N, nitrite as N, sulfate, TDS, alkalinity as CaCO₃, bicarbonate as CaCO₃, ammonia as N, and TOC in data packages EV15060175 and EV15060181.

A project-specified control limit of 20 percent was used to evaluate the RPDs between the duplicate water samples, except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. RPDs for the duplicate sample pairs submitted for analysis were within the project-specified control limits with the following exceptions:

- The RPD for naphthalene associated with the PAHs analysis for sample pair MW-106-062515/DUP1-062515 in data package EV15060181 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.
- The RPD for n-nitrosodiphenylamine associated with the SVOCs analysis for sample pair MW-106-062515/DUP1-062515 in data package EV15060181 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.
- The RPD for PCB-1232 associated with the PCBs analysis for sample pair MW-106-062515/DUP1-062515 in data package EV15060181 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.
- The RPDs for TDS and nitrate associated with the conventionals analysis for sample pair MW-106-062515/DUP1-062515 in data package EV15060181 exceeded the project-specified

control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.

- The RPD for arsenic associated with the dissolved metals analysis for sample pair MW-106-062515/DUP1-062515 in data package EV15060181 exceeded the project-specified control limit; the associated sample results were qualified as estimated (J), as indicated in Table 1.

INITIAL AND CONTINUING CALIBRATION

Laboratory-specified calibration limits for initial and continuing calibrations were met for all analyses. No qualification of the data was necessary.

ADDITIONAL QUALITY CONTROL ACTION

Additional quality control measures reported by the laboratory included the following:

- The oil-range petroleum hydrocarbon results reported for samples FPP-MW-2-062415 in data package EV15060175 and FPP-MW-1-062515 in data package EV15060188 were biased high due to a diesel-range product overlap. Associated results were qualified as estimated (J), as indicated in Table 1.
- The diesel-range petroleum hydrocarbon results reported for sample MW-101-062515 in data package EV15060181 was biased high due to an oil-range product overlap. Associated results were qualified as estimated (J), as indicated in Table 1.
- The laboratory reported that the sulfate result reported for sample MW-6-062415 in data package EV15060175 was positively identified, but that the value may be less than the reported estimate; the associated sample result was qualified as estimated (J), as indicated in Table 1.

COMPLETENESS AND OVERALL DATA QUALITY

The completeness for this data set is 100 percent, which meets the project-specified goal of 95 percent minimum.

Data precision was evaluated through matrix spike duplicates, laboratory control sample duplicates, and blind field duplicates. Data accuracy was evaluated through matrix spikes, laboratory control samples, and surrogate spikes. Based on this data quality verification and validation, all of the data were determined to be acceptable. No data were rejected.

REFERENCES

EPA. 2010. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA-540-R-10-011. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. January.

EPA. 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*. USEPA-540-R-08-01. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. Washington, D.C. June.

EPA. 2004. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. EPA 540-R-04-004. U.S. Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. October.

EPA. 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*. EPA-540/R-99-008. U.S. Environmental Protection Agency. Office of Emergency and Remedial Response. Washington, D.C. October.

Landau Associates. 2014. *Quality Assurance Project Plan, Remedial Investigation, Closed City of Yakima Landfill Site, Yakima, Washington*. Prepared for the City of Yakima and submitted to the Washington State Department of Ecology. August 11.

TABLE 1
SUMMARY OF DATA QUALIFIERS
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON

Data Package	Analytical Group	Analyte	Result	Qualifier	Sample Number	Reason
EV15060175	Conventionals	Sulfate	1.7 L	J	MW-6-062415	Analyte was positively identified but value may be less than reported estimate
EV15060175	TPH-Dx	Oil (w/o SGA)	250	J	FPP-MW-2-062415	High bias due to diesel range product overlap
EV15060175	Total Metals	Arsenic	0.86 B	U	MW-9A-062415	Method blank contamination
EV15060175	Total Metals	Arsenic	1.6 B	U	DUP2-062415	Method blank contamination
EV15060175	Total Metals	Arsenic	0.94 B	U	MW-16-062415	Method blank contamination
EV15060175	Total Metals	Arsenic	0.76 B	U	MW-100-062415	Method blank contamination
EV15060175	Total Metals	Arsenic	2.1 B	U	MW-17-062415	Method blank contamination
EV15060175	Total Metals	Arsenic	0.63 B	U	TP-MW-1-062415	Method blank contamination
EV15060175	Total Metals	Arsenic	1.5 B	U	MW-6-062415	Method blank contamination
EV15060175	Total Metals	Arsenic	1.2 B	U	FPP-MW-3-062415	Method blank contamination
EV15060175	Total Metals	Arsenic	2.5 B	U	FPP-MW-2-062415	Method blank contamination
EV15060175	Total Metals	Arsenic	2.8 B	(no qual)	MW-11-062415	Concentration does not need qualifier
EV15060175	Total Metals	Arsenic	6.2 B	(no qual)	MW-104-062415	Concentration does not need qualifier
EV15060175	Total Metals	Lead	0.32 B	U	MW-9A-062415	Method blank contamination
EV15060175	Total Metals	Lead	0.30 B	U	DUP2-062415	Method blank contamination
EV15060175	Total Metals	Lead	0.36 B	U	MW-16-062415	Method blank contamination
EV15060175	Total Metals	Lead	0.35 B	U	MW-100-062415	Method blank contamination
EV15060181	SVOCs	Pyridine	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	N-Nitrosodimethylamine	1.4 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Aniline	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Bis(2-Chloroethyl)ether	0.88 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Benzyl Alcohol	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Bis(2-Chloroisopropyl)ether	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	N-Nitroso-di-n-propylamine	1.9 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Hexachloroethane	1.9 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Nitrobenzene	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Isophorone	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Bis(2-Chloroethoxy)methane	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	4-Chloroaniline	1.8 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Hexachlorocyclopentadiene	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	2-Chloronaphthalene	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	2-Nitroaniline	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Dimethylphthalate	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	2,6-Dinitrotoluene	1.7 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	3-Nitroaniline	5.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Dibenzofuran	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	2,4-Dinitrotoluene	0.73 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Diethylphthalate	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	4-Chlorophenyl-phenylether	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	4-Nitroaniline	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	N-Nitrosodiphenylamine	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Azobenzene	1.5 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	4-Bromophenyl-phenylether	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Carbazole	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Di-n-Butylphthalate	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Butylbenzylphthalate	2.0 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	3,3'-Dichlorobenzidine	1.9 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Bis(2-Ethylhexyl)phthalate	0.75 U	UJ	MW-106-062515	Low surrogates recovery
EV15060181	SVOCs	Di-n-Octylphthalate	2.0 U	UJ	MW-106-062515	Low surrogates recovery

TABLE 1
SUMMARY OF DATA QUALIFIERS
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON

Data Package	Group	Analyte	Result	Qualifier	Sample Number	Reason
EV15060181	TPH-Dx	Diesel (w/o SGC)	450	J	MW-101-062515	High bias due to oil range product overlap
EV15060181	PAHs	Naphthalene	0.059	J	MW-106-062515	High field duplicate RPD
EV15060181	PAHs	Naphthalene	0.013	J	DUP-1-062515	High field duplicate RPD
EV15060181	SVOCs	N-Nitrosodiphenylamine	2.0 U	UJ	MW-106-062515	High field duplicate RPD
EV15060181	SVOCs	N-Nitrosodiphenylamine	5.8	J	DUP-1-062515	High field duplicate RPD
EV15060181	PCBs	PCB-1232	0.022	J	MW-106-062515	High field duplicate RPD
EV15060181	PCBs	PCB-1232	0.0095	J	DUP-1-062515	High field duplicate RPD
EV15060181	Conventionals	Total Dissolved Solids	200	J	MW-106-062515	High field duplicate RPD
EV15060181	Conventionals	Total Dissolved Solids	250	J	DUP-1-062515	High field duplicate RPD
EV15060181	Conventionals	Nitrate	0.088	J	MW-106-062515	High field duplicate RPD
EV15060181	Conventionals	Nitrate	0.034 U	UJ	DUP-1-062515	High field duplicate RPD
EV15060181	Diss. Metals	Arsenic	6.7	J	MW-106-062515	High field duplicate RPD
EV15060181	Diss. Metals	Arsenic	8.3	J	DUP-1-062515	High field duplicate RPD
EV15060181	Total Metals	Arsenic	2.5 B	U	MW-101-062515	Method blank contamination
EV15060181	Total Metals	Arsenic	7.0 B	(no qual)	MW-106-062515	Concentration does not need qualifier
EV15060181	Total Metals	Arsenic	6.6 B	(no qual)	DUP-1-062515	Concentration does not need qualifier
EV15060181	Total Metals	Arsenic	3.2 B	(no qual)	MW-105-062515	Concentration does not need qualifier
EV15060181	Total Metals	Arsenic	7.7 B	(no qual)	MW-18-062515	Concentration does not need qualifier
EV15060181	Total Metals	Arsenic	6.8 B	(no qual)	TP-MW-2-062515	Concentration does not need qualifier
EV15060188	SVOCs	Pyridine	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	N-Nitrosodimethylamine	1.4 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Aniline	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Bis(2-Chloroethyl)ether	0.88 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Benzyl Alcohol	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Bis(2-Chloroisopropyl)ether	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	N-Nitroso-di-n-propylamine	1.9 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Hexachloroethane	1.9 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Nitrobenzene	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Isophorone	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Bis(2-Chlorethoxy)methane	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	4-Chloroaniline	1.8 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Hexachlorocyclopentadiene	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	2-Chloronaphthalene	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	2-Nitroaniline	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Dimethylphthalate	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	2,6-Dinitrotoluene	1.7 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	3-Nitroaniline	5.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Dibenzofuran	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	2,4-Dinitrotoluene	0.73 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Diethylphthalate	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	4-Chlorophenyl-phenylether	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	4-Nitroaniline	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	N-Nitrosodiphenylamine	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Azobenzene	1.5 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	4-Bromophenyl-phenylether	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Carbazole	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Di-n-Butylphthalate	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Butylbenzylphthalate	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	3,3'-Dichlorobenzidine	1.9 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	SVOCs	Bis(2-Ethylhexyl)phthalate	0.75 U	UJ	MW-7-062515	Low surrogates recovery

TABLE 1
SUMMARY OF DATA QUALIFIERS
CLOSED YAKIMA LANDFILL SITE
YAKIMA, WASHINGTON

Data Package	Group	Analyte	Result	Qualifier	Sample Number	Reason
EV15060188	SVOCs	Di-n-Octylphthalate	2.0 U	UJ	MW-7-062515	Low surrogates recovery
EV15060188	TPH-Dx	Oil (w/o SGC)	1900	J	FPP-MW-1-062515	High bias due to diesel range product overlap
EV15060188	TPH-Dx	Oil (w/ SGC)	470	J	FPP-MW-1-062515	High bias due to diesel range product overlap

Notes

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = Indicates the compound was not detected at the reported concentration.

UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

B = Method blank contamination

Terrestrial Ecological Evaluation

TECHNICAL MEMORANDUM

TO: Jeffrey Fellows; Landau Associates, Inc.
FROM: Rone Brewer; Sound Ecological Endeavors; LLC
DATE: April 3, 2015

**RE: PROBLEM FORMULATION
AND
TERRESTRIAL ECOLOGICAL EVALUATION
CLOSED CITY OF YAKIMA LANDFILL
YAKIMA, WASHINGTON**

INTRODUCTION

In accordance with Model Toxics Control Act (MTCA), for soil contamination, the potential impact of hazardous substances on terrestrial ecological receptors must be evaluated under Washington Administrative Code (WAC) 173-340-7490 through 173-340-7494. Specifically, either an exclusion must be established for the site under WAC 173-340-7491 or a terrestrial ecological evaluation must be conducted under WAC 173-340-7492 or 173-340-7493 for characterization of existing or potential threats to terrestrial plants and animals exposed to hazardous substances in soil, and if needed, establish site-specific cleanup standards for the protection of terrestrial plants and animals. These procedures are not intended to be used to evaluate potential threats to ecological receptors in sediments, surface water, or wetlands. This technical memorandum presents a problem formulation and terrestrial ecological evaluation for the City of Yakima (City) Closed Landfill located at the east end of East “E” Street in Yakima, Washington. (Figures 1 and 2).

Site History and Description

The 35-acre landfill area (Site) is delineated by the extent of municipal solid waste (MSW) at the southern edge of the former overall 240-acre mill operation area (Figure 1). The Site is situated at an elevation of approximately 1,070 feet (ft) above mean sea level (MSL), sloping slightly to the east and southeast. The mill was originally developed in 1903 and 1904 by the Cascade Lumber Company with the Site area originally developed as one of several log ponds associated with Mill operations that occupied much of the northeast and southeast portions of the Mill. The Cascade Lumber Company merged with Boise Payette Lumber Company between 1957 and 1958 to form Boise Cascade. Prior to the construction of Interstate 82 (I-82) in the 1960s and early 1970s, the eastern portion of the Mill

operations extended to the banks of the Yakima River. Most Mill operations and structures were located to the north and northwest of the Site. Boise Cascade closed the mill operations in 2006 and the majority of the former mill buildings and ancillary structures have now been demolished; however, many foundations and subsurface trenches/structures remain. Active railroad tracks extend generally east to west through the southern portion of the Mill and near the northern boundary of the Site.

The City's MSW landfill operated in the 1960s and 70s, with wastes deposited into the former log pond excavation (City of Yakima 1996). The landfill was not lined prior to waste deposition, was closed in 1973 (Ecology 1996), and the operations and closure are unlikely to have implemented minimum functional standards (MFS) for solid waste management (Chapter 173-301 WAC) which were promulgated in 1972 and updated in 1988. Closure of the site included covering the MSW with available onsite materials, primarily including native soils and woody debris from Mill operations.

Upon closure of the Mill in 2006 and up until May 2010, Yakima Resources used the property for temporary log storage over a large area of the Site and log chipping operations along the northwestern edge of the Site. Since May 2010, the only activities that have occurred at the mill have been the demolition of historical buildings and removal of equipment. Yakima Resources continues to process former building construction materials (e.g., concrete, etc.) at areas north of the railroad tracks and of the Site. Recycling and processing of wood debris that remain on the mill area is also being conducted.

The Site is currently limited to the approximately 33 acre areal extent (approximately 440,000 cubic yards) of MSW. The MSW is as thick as 15 ft, but averages about 10 ft in thickness, and is overlain by up to approximately 10 ft of native soil and woody debris fill. Very sparse vegetation has started to reclaim some areas of the Site (See photographs in Attachment 1).

PROBLEM FORMULATION

Problem formulation is the process of describing the Site and its ecology, with an emphasis on identification of important ecological receptors or functions that are present, may be exposed to Site-related contamination, and are likely to require assessment for potential effects due to site-related contamination. In this manner, problem formulation leads to a scientific/management decision point regarding the need for and scope of any potentially-required further ecological assessment. Geology, climate, and site use history dictate the regional and Site ecology. Site ecology, in turn, defines the ecological receptors present and their potential contaminant exposure pathways.

Geology

Conditions immediately surrounding the Site are dominated by Yakima River erosion and (alluvial) deposition including diverse mixtures of silts, sands, and gravels (SLR 2009, 2010). Generally, the alluvium is underlain by clayey shale and sandstone (Ellensburg Formation) capped with cemented gravel approximately 44 ft below ground surface (BGS; Landau Associates 1998). The Site surface has been altered over time and now is relatively level and covered predominantly by a mixture of wood debris (fill) from historical log storage operations, mixed with limited amounts of native alluvial soil (silt, sand, gravel, and cobble). In some areas woody fill material extend to depths of 24.5 ft BGS. The woody fill and limited native soils generally overly the MSW within the Site boundaries. Underlying the fill and MSW is sand and sandy-cobbly gravel.

Climate

The climate of the Yakima region ranges from cool and moist in the Cascade Mountains to warm and dry in the Columbia Plateau. Annual precipitation near the Cascade crest ranges from 80 to 140 inches, promoting annual flows in the Site-adjacent Yakima River. Lower elevations in the eastern part of the Columbia Plateau may receive 10 inches of precipitation or less. Summer temperatures average 55° F in the mountains and 82° F in the valleys. Winter temperatures generally are moderate, controlled by predominant westerly winds and related coastal maritime influence. Average maximum and minimum winter temperatures range from 25° to 40° F and 15° to 25°F, respectively (Yakima Sub-Basin Fish and Wildlife Planning Board, 2004).

A sharp precipitation gradient exists in the Yakima basin, decreasing in an easterly/southeasterly direction. Cooling of moist maritime air passing over the Cascades results in 100 inches or more of precipitation near the crest, to 48 inches 10 miles east of the crest, and 8-10 inches within 20 miles. About half the annual precipitation occurs during November through January. Snowfall in the valleys ranges from 20 to 25 inches and from 75 inches at 2,500 feet to over 500 inches at the summit of the Cascades. Virtually all of the streams in the basin originate at higher elevations where annual precipitation is 30 inches or more and along with mountain snowpack provides most of the water for agricultural irrigation and streamflow (Yakima Sub-Basin Fish and Wildlife Planning Board, 2004).

Previous Investigations

Since 1998, multiple investigations have been conducted of MSW, groundwater, landfill gas (LFG), and soil conditions at or in the vicinity of the Site, including a determination of the extent of MSW, which defines the Site boundaries. These investigations were summarized by Landau Associates (2015) in the Remedial Investigation Work Plan for the Closed City of Yakima Landfill Site. The TEE focuses on terrestrial ecological exposures to site-related contaminants in soil. Soil sample locations included as part of this evaluation are shown on Figure 2.

The MSW was found to average 10 ft thick, but is up to 15 ft thick in some places. The extent of MSW is shown on Figure 2, (Ecology 2014, SLR 2009, 2010). Between 1 ft and 9 ft of sandy silt and/or silty gravel was found to be present overlying the MSW. This silt and gravel is overlain by 1 ft to 10 ft of mill-related woody debris (bark chips, wood chips, sawdust, etc.). The average thickness of soil and wood debris is 10 ft overlying the MSW.

Unacceptable concentrations of methane were detected in LFG samples in some locations overlying the MSW. Soils overlying the MSW, but under the woody debris, were sampled and analyzed for petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs). The analytical results for the soil samples pertinent to the TEE are provided in Table 1. Sample locations with no data listed in Table 1 had soil samples collected from depths deeper than 15 ft bgs, which is below the depth of concern for terrestrial ecological risks because it prohibits exposure to contaminated soil. Relatively few Site-related contaminants were detected (i.e., Contaminants of Interest [COIs]), primarily related to pesticides and petroleum.

Past, Current, and Future Land Use

Past and current land use of the Site has been as a 20 ft deep (or deeper) industrial log mill pond, then a MSW landfill. The proposed future land use is expected to remain commercial/industrial.

Within the TEE process, for industrial or commercial properties, current and future exposure to site-related contaminants need only be evaluated for terrestrial wildlife protection. Plants and soil biota need not be considered unless:

- (i) The species is protected under the federal Endangered Species Act; or
- (ii) The soil contamination is located on an area of an industrial or commercial property where vegetation must be maintained to comply with local government land use regulations.

Neither of these criteria are met at the Site. Therefore, the TEE will focus on terrestrial wildlife protection.

Regional & Site Terrestrial Ecology

Yakima lies within the Columbia Plateau shrub-steppe habitat which includes semi-arid vegetation communities generally consisting of one or more layers of perennial grasses with a discontinuous layer of shrubs (e.g. sagebrush). Some of the many regional species of wildlife requiring shrub-steppe habitat include greater sage-grouse, sage sparrows, sage thrashers, and pygmy rabbits. A host of other birds, mammals, reptiles, and insects are found primarily in shrub-steppe communities

Very sparse terrestrial habitat is present east of the site, across Interstate-82; but the interstate creates a barrier such that the river and its associated habitat are not contiguous with the Site. Commercial land use and urban housing is present, and therefore no significant terrestrial habitat exists, south, west, or north of the Site.

As can be seen in the photographs in Attachment 1 and on Figure 2, essentially no wildlife habitat is present on or surrounding the Site. Further, the disturbed wood debris surface is not conducive to small mammals or natural soil invertebrate populations. Riparian vegetation has developed at the eastern property boundary along an irrigation canal, an entirely artificial watercourse. This vegetated area along the canal is less than 1.5 acres. Critical areas including wetlands and streams have been found to be absent from the Site (Ecological Land Services, 2010). Further, no sensitive terrestrial environments (i.e. areas of particular ecological value, natural areas, critical habitat, etc.) exist on or near the Site.

Terrestrial Ecological Exposure to Contaminants of Interest

Generally, terrestrial ecological receptors may be exposed to COIs in shallow soil via direct contact, uptake by roots from soil, ingestion of soil, ingestion of plants growing in contaminated soil, and ingestion of prey that are exposed to contaminated soil. However, given the lack of habitat on the Site and woody debris covering the Site, the numbers and types of ecological receptors exposed to site-related COIs is extremely limited and exposure will be transient for animals passing across the Site.

TERRESTRIAL ECOLOGICAL EVALUATION

A Site-specific TEE includes three potential processes. First a site is examined for exclusion from further assessment, then either a simplified or a site-specific evaluation is conducted depending on site conditions. The first step is examining the criteria for exclusion.

Exclusion Assessment

The MTCA, at WAC 173-340-7491, provides the four exclusion criteria, any one of which can be met in order for the Site to be excluded from further terrestrial ecological assessment. The Site clearly does not meet the second, third, or fourth criteria because physical barriers to exposure are not present across the entire Site, there is more than 1.5 acres of undeveloped land (as defined in WAC 173-340-7491[1][c][iii]) on the Site, and some of the COIs detected within soil do not have background concentrations. The last possible exclusion is if all soil contamination is, or will be, located below a specific (15 ft BGS) or conditional (e.g. 6 ft BGS minimum) point of compliance. But site-related COIs, primarily petroleum related compounds and organochlorine pesticides were detected (albeit, at very low concentrations) in soils shallower than 6 ft, therefore, this exclusion also does not simply apply. The only way an exclusion may apply at the Site is if a barrier were to be placed between the soil contamination and the surface such that ecological exposure is eliminated, and an institutional control was implemented to assure the barrier remained in place.

Given that exclusion from further assessment currently does not apply, then a decision is necessary regarding the need for a simplified or site-specific ecological evaluation. Because the site is not on or adjacent to current or planned native habitat, is not used by threatened, endangered, state priority or state sensitive species, the site does not contain 10 acres of native vegetation, and does not present a risk to wildlife populations (final decision to be approved by Ecology), the Site qualifies for a simplified terrestrial evaluation.

Simplified Evaluation

The simplified evaluation focuses on 1) terrestrial ecological exposure potential, 2) known and likely exposure pathways, or 3) the presence of specific priority contaminants listed by Ecology (MTCA Table 749-2) at concentrations below table-listed “acceptable” concentrations. The site is too large to meet the quantitative threshold required in the exposure potential assessment that would allow ending further evaluation of the Site. However, if the site simply were smaller, it would meet the threshold, so

some discussion with Ecology may be warranted to evaluate the applicability of a determination of de minimis exposure potential at the Site.

The exposure pathway analysis allows the ecological evaluation to be ended if there are no exposure pathways for ecological receptors for priority chemicals of ecological concern listed in Table 749-2 at or above the concentrations provided. For commercial/industrial sites such as the Site, only exposures to wildlife (i.e., not soil biota or plants) are of concern. Given the site conditions presented earlier in the problem formulation, there is some slight potential for the exposure of wildlife to near-surface soil underlying the woody debris fill and thus, it cannot be said, as required for ending further evaluation, that “no” potential for an exposure pathway exists. However, because of the woody debris fill overlying soil in nearly all areas of the Site, the potential for terrestrial wildlife exposure to Site-related soil contamination is deemed extremely low, particularly given the lack of vegetation on the Site and planned future commercial/industrial land use.

For the contaminants analysis, all Table 749-2 listed priority contaminants detected in Site soil at depths less than 15 ft bgs (Table 1) are at concentrations below the provided acceptable concentrations. However, there were two Table 749-2 listed contaminants (silver and bis-2-ethylhexylphthalate) detected in Site soil, for which Table 749-2 does not provide acceptable concentrations. In this situation, according to WAC 173-340-7492(2)(c)(ii), toxicity data based on appropriate bioassays may be used to evaluate whether these detected COIs without listed acceptable concentrations, are present at toxic concentrations and/or are likely to bioaccumulate. While site-specific bioassays were not conducted, similarly-derived lowest ecological screening benchmarks for wildlife exposures from soil contamination were sought from common and readily-available ecological risk assessment literature. The identified ranges of concentrations in soil potentially toxic to wildlife were 4.2 to 15 mg/kg for silver and 0.1 to 0.95 mg/kg for bis-2-ethylhexylphthalate (Oak Ridge Operations Office, Risk Assessment Information System [OROO, 2015]). Neither contaminant was identified as having a particular potential to bioaccumulate.

Silver was detected on Site at 3.5 mg/kg, which is below the available ORO soil risk-based screening concentrations and is therefore, deemed unlikely to result in ecological risks at the site. Bis-2-ethylhexylphthalate was detected at 110 mg/kg and 820 mg/kg in two locations, at 13.5 ft bgs. These bis-2-ethylhexylphthalate concentrations are above the available soil screening concentration, suggesting that if adequate exposure to contaminated soil occurs at these locations and depths, terrestrial wildlife may be at risk. However, assuming the conditional point of compliance is 6 ft bgs as allowed within the simplified evaluation, then no sample location within this depth range has been shown to have concentrations of bis-2-ethylhexylphthalate above the identified ecological risk-based screening concentration. One chemical, detected at only two locations, below the 6 ft bgs conditional point of

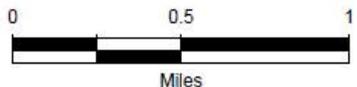
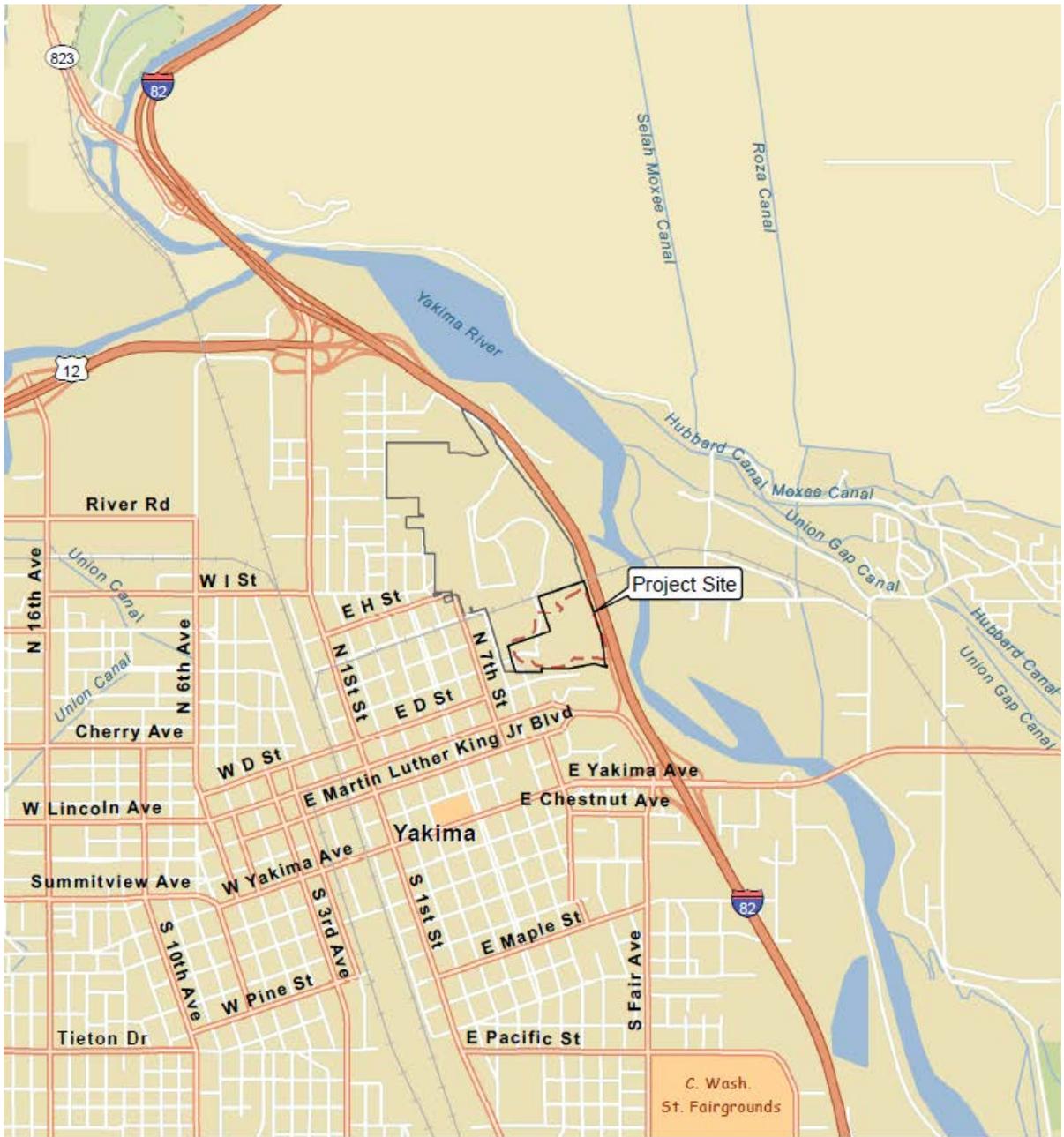
compliance, combined with future commercial/industrial land use, woody-debris fill over the contaminated soil, and institutional controls to assure the potential for wildlife exposure continues to be limited above a conditional subsurface point of compliance, combined adequately reduce the potential for unacceptable exposure, meeting the TEE simplified evaluation criteria for no further evaluation.

CONCLUSION

The MTCA TEE exclusion assessment criteria could not be met. However, using Table 749-2 with incorporation of readily-available and commonly used ecological risk-based screening concentrations for silver and bis-2-ethylhexylphthalate, and implementation of 6 ft (minimum) bgs conditional point of compliance, which requires institutional controls to assure the minimized potential for ecological exposure to Site-related contaminants, Site conditions met the TEE simplified evaluation procedure criteria for no further evaluation.

REFERENCES

- City of Yakima. 1996. Letter: *Interstate I-82 Gateway Project – January 11, 1996 Meeting Regarding Landfill and Wetland Issues*. From City of Yakima to Washington State Department of Ecology. January 22.
- Ecological Land Services, Inc. 2010. Critical Areas Determination Report for Cascade Mill Ponds Site, City of Yakima, Washington. Prepared for Dunollie Enterprise, LLC, Yakima, Washington. Project Number 1897.02. August.
- Ecology. 2014. Letter: *Regarding Further Action at Interstate 82 Exit 33A Yakima City Landfill, 805 N. 7th St., Yakima (Parcels 19318-41001 and 191318-42001)*. From Matthew Durkee, Washington State Department of Ecology to Joan Davenport, City of Yakima. May 2.
- Ecology. 1996. Letter: *Comments on the Boise Cascade Yakima Facility Industrial Residuals Landfill Closure and Monitoring Plan*. From Washington State Department of Ecology to Yakima County Health District. February 27.
- Ecology 1994, *Natural Background Concentrations in Washington State*. Compiled by Charles San Juan. Toxics Cleanup Program. Washington State Department of Ecology. Olympia, Washington. Publication No. 94-115. October
- Landau Associates. 2014. Draft Work Plan, Remedial Investigation, Closed City of Yakima Landfill, Yakima Washington. Prepared for the City of Yakima. August.
- Landau Associates. 2013. *Phase II Investigation, Yakima Mill Site, Triangular and Plywood Plant Parcels, Yakima, Washington*. November 26.
- Landau Associates. 1998. *Hydrogeologic Study and Groundwater Monitoring Plan, Boise Cascade Yakima Wood Products Complex, Yakima, Washington*. November 5.
- Oak Ridge Operations Office (OROO). 2015. *Risk Assessment Information System*. Office of Environmental Management, U.S. Department of Energy. <http://rais.ornl.gov/>.
- Parametrix. 2008. *Phase II Environmental Site Assessment, Former City of Yakima Municipal Landfill Site, Yakima, Washington*. October.
- SLR. 2014. Voluntary Cleanup Program Agreement and Application – Closed City of Yakima Landfill, Parcels 191318-41001 and 191318-42001, Yakima, Washington. Prepared on behalf of City of Yakima. February 19.
- SLR. 2010. Additional Investigation Report, Closed City of Yakima Landfill Site, Yakima, Washington. March 17.
- SLR. 2009. Remedial Investigation Report, Closed City of Yakima Landfill Site, Yakima, Washington. October 12.
- Yakima SubBasin Fish and Wildlife Planning Board. 2004. *Yakima SubBasin Plan*. Prepared for the Northwest Power and Conservation Council. May 28.



Terrestrial Ecological Evaluation
 Closed City of Yakima Landfill
 Yakima, Washington
 Lat. 46.61300°, Long. -120.49370°

Site Location

Figure
1

TABLE 1
 Upgradient and On-Site Soil Analytical Data
 Shallower Than Fifteen Feet Below the Ground Surface
 Terrestrial Ecological Evaluation
 Closed City of Yakima Landfill
 Yakima, Washington

Analyte	Table 749-2 Industrial Screening Level Concentration	MW-100	MW-102	MW-104	MW-105	MW-106	MW-106	MW-107	MW-108	GP-24	GP-26
		(13.5-14)	(4-5)	(2.5-3)	(2.5-3.5)	(2.5-3.5)	(13.5-14.5)	(2.5-3.5)	(2.5-3.5)	(12.5-13.0)	(7.5-8.5)
		EV14090067-02 9/11/2014	EV14090051-01 9/8/2014	EV14090022-03 9/3/2014	EV14090022-01 9/2/2014	EV14090051-05 9/9/2014	EV14090067-01 9/10/2014	EV14090051-03 9/9/2014	EV14090040-01 9/4/2014	EV14100222-02 10/30/2014	EV14100222-01 10/29/2014
TOTAL PETROLEUM HYDROCARBONS (mg/kg) HCID											
Gas Range	12000	20 U	20 U	20 U	20 U	>20	20 U	20 U	20 U	20	20 U
Diesel Range	13500	50 U	50 U	50 U	50 U	>50	50 U	50 U	50 U	50	50 U
Oil Range	--	100 U	>100	>100	>100	>100	100 U	>100	>100	>100	100 U
NWTPH-Dx (mg/kg)											
Diesel Range (w/SGC)	13500		25 U	25 U	25 U	87 J		250	25 U	140	--
Diesel Range (wo/SGC)	13500		25 U	46 U	25 U	150 J		300	25 U	160	--
Oil Range (w/SGC)	--		260	300	380	380		820	130	280	--
Oil Range (wo/SGC)	--		330	450	510	560		990	160	300	--
NWTPH-Gx (mg/kg)											
Gasoline Range	--		--	--	--	35		--	--	--	--
TOTAL METALS (mg/kg) Methods EPA-6020/EPA-7471											
Arsenic	20	1.4	1.9	2.2	3.6	2.6	2.1	1.7	3.5	2	2.3
Barium	1320	58	82	91	140	100	94	88	140	140	170
Cadmium	36	0.50 U	0.50 U	0.25 U	1.3	0.50 U	1.1	0.50 U	0.50 U	0.5U	0.5U
Chromium	135	23	7.9	12	24	13	16	24	17	17	24
Iron	--	25,000	17,000	20,000	35,000	25,000	24,000	27,000	28,000	25000	30000
Lead	220	2.9	39	56	190	51	11	68	26	9.1	17
Manganese	23500	380	200	330	330	520	210	470	570	280	340
Mercury	9	0.020 U	0.060	0.090	0.18	0.11	0.035	0.038	0.12	0.077	0.12
Selenium	0.8	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5U	5.3U
Silver	No Value Provided	0.50 U	0.50 U	3.5	0.28 U	0.50 U	0.50 U	0.50 U	0.50 U	0.5U	0.5U
PESTICIDES (mg/kg) Method EPA-8081											
alpha-BHC	10	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
beta-BHC	10	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
delta-BHC	10	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
gamma-BHC	10	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
Heptachlor	0.6	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
Aldrin	0.17	0.0026 U	--	--	--	--	0.0094	--	--	0.0032U	0.004U
Heptachlor Epoxide	0.6	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
Chlordane	7	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
Endosulfan I	No Value Provided	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
4,4'-DDE	1	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.0059
Dieldrin	0.17	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.0058U
Endrin	0.4	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
4,4'-DDD	1	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.045
Endosulfan II	No Value Provided	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
4,4'-DDT	1	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
Endrin Aldehyde	0.4	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
Endosulfan Sulfate	--	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.0053
Methoxychlor	--	0.0026 U	--	--	--	--	0.0032 U	--	--	0.0032U	0.004U
Toxaphene	No Value Provided	0.13 U	--	--	--	--	0.16 U	--	--	0.16U	0.2U
PCBs (mg/kg) Method EPA-8082											
PCB-1016	2	0.0052 U	--	--	--	--	0.0064 U	--	--	0.013U	0.016U
PCB-1221	2	0.011 U	--	--	--	--	0.013 U	--	--	0.025U	0.032U
PCB-1232	2	0.0052 U	--	--	--	--	0.0064 U	--	--	0.013U	0.016U
PCB-1242	2	0.0052 U	--	--	--	--	0.028	--	--	0.013U	0.016U
PCB-1248	2	0.0052 U	--	--	--	--	0.0064 U	--	--	0.013U	0.016U
PCB-1254	2	0.0052 U	--	--	--	--	0.0064 U	--	--	0.013U	0.016U
PCB-1260	2	0.0052 U	--	--	--	--	0.0064 U	--	--	0.013U	0.016U
VOCs (µg/kg) Method EPA-8260											
1,1,1,2-Tetrachloroethane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,1,1-Trichloroethane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,1,2,2-Tetrachloroethane	--	0.89 U	--	--	--	--	0.92 U	--	--	1.1U	1.6U
1,1,2-Trichloroethane	--	0.86 U	--	--	--	--	0.89 U	--	--	1U	1.5U
1,1-Dichloroethane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,1-Dichloroethene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,1-Dichloropropene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,2,3-Trichlorobenzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,2,3-Trichloropropane	--	0.94 U	--	--	--	--	0.97 U	--	--	1.1U	1.6U
1,2,4-Trichlorobenzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,2,4-Trimethylbenzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,2-Dibromo 3-Chloropropane	--	50 U	--	--	--	--	50 U	--	--	50U	50U
1,2-Dibromoethane	--	5.0 U	--	--	--	--	5.0 U	--	--	5U	5U
1,2-Dichlorobenzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,2-Dichloroethane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,2-Dichloropropane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,3-Dichlorobenzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,3,5-Trimethylbenzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,3-Dichloropropane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
1,4-Dichlorobenzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
2,2-Dichloropropane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
2-Butanone	--	50 U	--	--	--	--	50 U	--	--	50U	50U
2-Chlorotoluene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
2-Hexanone	--	50 U	--	--	--	--	50 U	--	--	50U	50U
4-Chlorotoluene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
4-Methyl-2-Pentanone	--	50 U	--	--	--	--	50 U	--	--	50U	50U
Acetone	--	50 U	--	--	--	--	50 U	--	--	130	250
Acrylonitrile	--	50 U	--	--	--	--	50 U	--	--	50U	50U

TABLE 1
 Upgradient and On-Site Soil Analytical Data
 Shallower Than Fifteen Feet Below the Ground Surface
 Terrestrial Ecological Evaluation
 Closed City of Yakima Landfill
 Yakima, Washington

Analyte	Table 749-2 Industrial Screening Level Concentration	MW-100	MW-102	MW-104	MW-105	MW-106	MW-106	MW-107	MW-108	GP-24	GP-26
		(13.5-14)	(4-5)	(2.5-3)	(2.5-3.5)	(2.5-3.5)	(13.5-14.5)	(2.5-3.5)	(2.5-3.5)	(12.5-13.0)	(7.5-8.5)
		EV14090067-02 9/11/2014	EV14090051-01 9/8/2014	EV14090022-03 9/3/2014	EV14090022-01 9/2/2014	EV14090051-05 9/10/2014	EV14090067-01 9/10/2014	EV14090051-03 9/9/2014	EV14090040-01 9/4/2014	EV14100222-02 10/30/2014	EV14100222-01 10/29/2014
Benzene	--	5.0 U	--	--	--	--	5.0 U	--	--	5U	5U
Bromobenzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Bromochloromethane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Bromodichloromethane	--	0.81 U	--	--	--	--	0.84 U	--	--	0.96U	1.4U
Bromoform	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Bromomethane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Carbon Disulfide	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Carbon Tetrachloride	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Chlorobenzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Chloroethane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Chloroform	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Chloromethane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Cis-1,2-Dichloroethene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Cis-1,3-Dichloropropene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Dibromochloromethane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Dibromomethane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Dichlorodifluoromethane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Ethylbenzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Hexachlorobutadiene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Isopropylbenzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
m,p-Xylene	--	20 U	--	--	--	--	20 U	--	--	20U	20U
Methyl T-Butyl Ether	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Methylene Chloride	--	20 U	--	--	--	--	20 U	--	--	20U	20U
N-Butylbenzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
N-Propyl Benzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
o-Xylene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
P-Isopropyltoluene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
S-Butyl Benzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Styrene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
T-Butyl Benzene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Tetrachloroethylene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Toluene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Trans-1,2-Dichloroethene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Trans-1,3-Dichloropropene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Trichloroethene	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Trichlorofluoromethane	--	10 U	--	--	--	--	10 U	--	--	10U	10U
Vinyl Chloride	--	0.033 U	--	--	--	--	0.034 U	--	--	0.04U	0.058U
SVOCs (µg/kg) Method EPA-8270											
1,2,4-Trichlorobenzene	--	100 U	--	--	--	--	100 U	--	--	100U	110U
1,2-Dichlorobenzene	--	100 U	--	--	--	--	100 U	--	--	100U	100U
1,3-Dichlorobenzene	--	100 U	--	--	--	--	100 U	--	--	100U	100U
1,4-Dichlorobenzene	--	100 U	--	--	--	--	100 U	--	--	100U	100U
2,3,4,6-Tetrachlorophenol	--	100 U	--	--	--	--	100 U	--	--	100U	100U
2,4,5-Trichlorophenol	--	100 U	--	--	--	--	100 U	--	--	100U	100U
2,4,6-Trichlorophenol	--	38 U	--	--	--	--	43 U	--	--	50U	62U
2,4-Dichlorophenol	--	240 U	--	--	--	--	260 U	--	--	310U	380U
2,4-Dimethylphenol	--	100 U	--	--	--	--	100 U	--	--	100U	100U
2,4-Dinitrophenol	--	100 U	--	--	--	--	100 U	--	--	100U	100U
2,4-Dinitrotoluene	--	21 U	--	--	--	--	23 U	--	--	27U	34U
2,6-Dichlorophenol	--	250 U	--	--	--	--	250 U	--	--	250U	290U
2,6-Dinitrotoluene	--	36 U	--	--	--	--	40 U	--	--	47U	58U
2-Chloronaphthalene	--	100 U	--	--	--	--	100 U	--	--	100U	100U
2-Chlorophenol	--	250 U	--	--	--	--	250 U	--	--	250U	250U
2-Methylnaphthalene	--	250 U	--	--	--	--	250 U	--	--	250U	250U
2-Methylphenol	--	100 U	--	--	--	--	100 U	--	--	100U	100U
2-Nitroaniline	--	100 U	--	--	--	--	100 U	--	--	100U	100U
2-Nitrophenol	--	100 U	--	--	--	--	100 U	--	--	100U	100U
3&4-Methylphenol	--	100 U	--	--	--	--	100 U	--	--	100U	170
3,3-Dichlorobenzidine	--	170 U	--	--	--	--	180 U	--	--	220U	270U
3-Nitroaniline	--	1000 U	--	--	--	--	1000 U	--	--	1000U	1000
4,6-Dinitro-2-Methylphenol	--	100 U	--	--	--	--	100 U	--	--	100U	100U
4-Bromophenyl-Phenylether	--	100 U	--	--	--	--	100 U	--	--	100U	100U
4-Chloro-3-Methylphenol	--	500 U	--	--	--	--	500 U	--	--	500U	500U
4-Chloroaniline	--	1000 U	--	--	--	--	1000 U	--	--	1000U	1000U
4-Chlorophenyl-Phenylether	--	100 U	--	--	--	--	100 U	--	--	100U	100U
4-Nitroaniline	--	250 U	--	--	--	--	250 U	--	--	250U	250U
4-Nitrophenol	--	100 U	--	--	--	--	100 U	--	--	100U	100U
Aniline	--	45 U	--	--	--	--	50 U	--	--	50U	72U
Azobenzene	--	100 U	--	--	--	--	100 U	--	--	100U	100U
Benzo[G,H,I]Perylene	--	100 U	--	--	--	--	100 U	--	--	100U	100U
Benzoic Acid	--	1000 U	--	--	--	--	1000 U	--	--	1000	1100
Benzyl Alcohol	--	100 U	--	--	--	--	100 U	--	--	100U	100U
Bis(2-Chloroethoxy)Methane	--	250 U	--	--	--	--	250 U	--	--	250U	250U
Bis(2-Chloroethyl)Ether	--	93 U	--	--	--	--	100 U	--	--	120U	150U
Bis(2-Chloroisopropyl)Ether	--	250 U	--	--	--	--	250 U	--	--	250U	250U
Bis(2-Ethylhexyl)Phthalate	No Value Provided	110	--	--	--	--	820	--	--	100U	100U
Butylbenzylphthalate	--	100 U	--	--	--	--	100 U	--	--	100U	100U
Carbazole	--	250 U	--	--	--	--	250 U	--	--	250U	250U
Dibenzofuran	--	100 U	--	--	--	--	100 U	--	--	100U	100U

TABLE 1
 Upgradient and On-Site Soil Analytical Data
 Shallower Than Fifteen Feet Below the Ground Surface
 Terrestrial Ecological Evaluation
 Closed City of Yakima Landfill
 Yakima, Washington

Analyte	Table 749-2 Industrial Screening Level Concentration	MW-100	MW-102	MW-104	MW-105	MW-106	MW-106	MW-107	MW-108	GP-24	GP-26
		(13.5-14)	(4-5)	(2.5-3)	(2.5-3.5)	(2.5-3.5)	(13.5-14.5)	(2.5-3.5)	(2.5-3.5)	(12.5-13.0)	(7.5-8.5)
		EV14090067-02 9/11/2014	EV14090051-01 9/8/2014	EV14090022-03 9/3/2014	EV14090022-01 9/2/2014	EV14090051-05 9/9/2014	EV14090067-01 9/10/2014	EV14090051-03 9/9/2014	EV14090040-01 9/4/2014	EV14100222-02 10/30/2014	EV14100222-01 10/29/2014
Diethylphthalate	--	100 U	--	--	--	--	100 U	--	--	100U	100U
Dimethylphthalate	--	100 U	--	--	--	--	100 U	--	--	100U	100U
Di-N-Butylphthalate	200	100 U	--	--	--	--	100 U	--	--	100U	100U
Di-N-Octylphthalate	--	100 U	--	--	--	--	100 U	--	--	100U	100U
Hexachlorobenzene	31	100 U	--	--	--	--	100 U	--	--	100U	100U
Hexachlorobutadiene	--	500 U	--	--	--	--	500 U	--	--	500U	500U
Hexachlorocyclopentadiene	--	100 U	--	--	--	--	100 U	--	--	100U	100U
Hexachloroethane	--	100 U	--	--	--	--	100 U	--	--	100U	100U
Isophorone	--	100 U	--	--	--	--	100 U	--	--	100U	110U
Nitrobenzene	--	100 U	--	--	--	--	100 U	--	--	100U	100U
N-Nitrosodimethylamine	--	26 U	--	--	--	--	29 U	--	--	34U	42U
N-Nitroso-Di-N-Propylamine	--	90 U	--	--	--	--	100 U	--	--	120U	150U
N-Nitrosodiphenylamine	--	100 U	--	--	--	--	110	--	--	100U	100U
Phenol	--	100 U	--	--	--	--	100 U	--	--	100U	100U
Pyridine	--	200 U	--	--	--	--	200 U	--	--	200U	200U
SVOCs (µg/kg) Method EPA-8270 SIM											
1-Methylnaphthalene	--	20 U	20 U	20 U	20 U	20 U	61	20 U	20 U	20U	20U
2-Methylnaphthalene	--	20 U	26	20 U	20 U	20 U	95	20 U	20 U	20U	22
Acenaphthene	No Value Provided	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20U	20U
Acenaphthylene	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20U	20U
Anthracene	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20U	20U
Benzo[a]Anthracene	--	20 U	20 U	21	99	20 U	20 U	20 U	52	20U	29
Benzo[a]Pyrene	300	20 U	20 U	22	71	20 U	20 U	20 U	20 U	20U	20U
Benzo[b]Fluoranthene	--	20 U	20 U	30	110	21	20 U	20 U	20 U	20U	37
Benzo[g,h,i]Perylene	--	20 U	20 U	25	64	20 U	20 U	20 U	20 U	20U	43
Benzo[k]Fluoranthene	--	20 U	20 U	20 U	31	20 U	20 U	20 U	20 U	20U	20U
Chrysene	--	20 U	20 U	20 U	63	20 U	20 U	20 U	20 U	20U	20U
Dibenz[a,h]Anthracene	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20U	20U
Fluoranthene	--	20 U	31	170	240	20 U	28	20 U	23	20U	120
Fluorene	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20U	20U
Indeno[1,2,3-cd]Pyrene	--	20 U	20 U	20 U	38	20 U	20 U	20 U	20 U	20U	20U
Naphthalene	--	20 U	36	20 U	20 U	20 U	20 U	20 U	20 U	20U	120
Pentachlorophenol	--	48 U	54 U	63 U	69 U	53 U	55 U	57 U	65 U	67U	79U
Phenanthrene	--	20 U	23	28	78	21	29	20 U	20 U	20U	100
Pyrene	--	20 U	33	45	120	20 U	24	20 U	20 U	20U	93

U = Indicates the compound was not detected at the reported concentration.

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

PCBs = polychlorinated biphenyls SGC = silica gel cleanup.

SVOCs = semivolatile organic compounds VOCs = volatile organic compounds

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

Bold = Detected compound.

-- = Not listed in Table 749-2

Shading = No Comparison Value Available

ATTACHMENT 1

Representative Site Photos
Terrestrial Ecological Evaluation
Closed City of Yakima Landfill



Photograph 1: On-Site Condition.



Photograph 2: Condition Along Irrigation Canal; < 1.5 Acres Along Northeastern Side of Site at Base of I-82 Right-of-Way.