



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

February 12, 2025

Richard Hoopis
PKST Everett 28th Place LLC
c/o Peakstone Realty Trust
150 N Riverside Plaza Suite 1950
Chicago, IL 60606

**Re: Preliminary Determination of Potential Liability for Release of Hazardous Substances
at the following Contaminated Site:**

- **Site Name:** Buse Timber & Sales
- **Site Address:** 3812 28th PI NE, Everett
- **Cleanup Site ID:** 4340
- **Facility/Site ID:** 2786
- **Snohomish County Assessor's Parcel Number(s):** 29050400300600 and 29050900201500

Dear Richard Hoopis:

Based on credible evidence, the Department of Ecology (Ecology) is proposing to find PKST Everett 28th Place LLC (PKST) potentially liable under Model Toxics Control Act (MTCA), Chapter 70A.305 RCW¹, for the release of hazardous substances at the Buse Timber & Sales facility (Site). Any person whom Ecology finds, based on credible evidence, to be potentially liable is known under MTCA as a "potentially liable person" or "PLP."

This letter identifies the basis for Ecology's proposed finding and your opportunity to respond to that finding. This letter also describes the scope of your potential liability and next steps in the cleanup process at the Site.

Proposed Finding of Liability

Ecology is proposing to find PKST liable under RCW 70A.305.040² for the release of hazardous substances at the Site. This proposed finding is based on the following evidence:

¹ <https://app.leg.wa.gov/rcw/default.aspx?cite=70A.305>

² <https://app.leg.wa.gov/rcw/default.aspx?cite=70A.305.040>

1. PKST is the current legal owner of both land parcels on which the Buse Timber & Sales Site is located, and on which Buse Timber & Sales operated since the early 1940s. Activities at the facility that potentially resulted in detrimental environmental effects include the operation of the sawmill, operation of a machine shop, hog fuel mixing, current and former dip tanks, fire pond, as well as other environmental conditions identified in the Limited Site Investigation prepared by Terracon Consultants, Inc (Terracon 2018) and the Buse Mill Phase II Environmental Site Investigation prepared by Apex Companies, LLC (Apex 2021).
2. Credible evidence exists indicating that a “release or threatened release” of a “hazardous substance” has occurred at the Site as defined in RCW 70A.305.020³(13) and (32), which poses a threat to human health or the environment. Confirmed exceedances of cleanup levels from previous sampling at the Site include ⁴(<https://apps.ecology.wa.gov/cleanupsearch/site/14770#site-documents>): **Soil:** arsenic, non-halogenated organics (petroleum – diesel), and non-halogenated organics (petroleum – other); **Groundwater:** arsenic, halogenated organics, non-halogenated organics (petroleum – diesel), and non-halogenated organics (petroleum – other); and **Sediment:** dioxins/furans, mercury.

Opportunity to Respond to Proposed Finding of Liability

In response to Ecology’s proposed finding of liability, you may either:

1. Accept your status as a PLP without admitting liability and expedite the process through a voluntary waiver of your right to comment. This may be accomplished by signing and returning the enclosed form or by sending a letter containing similar information to Ecology; or
2. Challenge your status as a PLP by submitting written comments to Ecology within thirty (30) calendar days of the date you receive this letter; or
3. Choose not to comment on your status as a PLP.

Please submit your waiver or written comments to the following address:

David Horne
Department of Ecology
Toxics Cleanup Program, Headquarters
PO Box 47600
Olympia, WA 98504-7600

³ <https://app.leg.wa.gov/rcw/default.aspx?cite=70A.305.020>

⁴ <https://apps.ecology.wa.gov/cleanupsearch/site/14770#site-documents>

After reviewing any comments submitted, or after 30 days if no response has been received, Ecology will make a final determination regarding your status as a PLP and provide you with written notice of that determination.

Identification of Other Potentially Liable Persons

If you are aware of any other persons who may be liable for the release of hazardous substances at the Site, Ecology encourages you to provide us with their identities and the reason you believe they are liable. Ecology also suggests you contact these other persons to discuss how you can jointly work together to most efficiently clean up the Site.

Responsibility and Scope of Potential Liability

Ecology may either conduct or require PLPs to conduct remedial actions to investigate and clean up the release of hazardous substances at a site. PLPs are encouraged to initiate discussions and negotiations with Ecology and the Office of the Attorney General that may lead to an agreement on the remedial action to be conducted.

Each liable person is strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release of hazardous substances at a site. If Ecology incurs remedial action costs in connection with the investigation or cleanup of real property and those costs are not reimbursed, then Ecology has the authority under RCW 70A.305.060⁵ to file a lien against that real property to recover those costs.

Next Steps in Cleanup Process

In response to the release of hazardous substances at the Site, Ecology intends to conduct the following actions under MTCA:

Amend Agreed Order No. DE 21518, which exists between Ecology and the former Site owner, to add PKST. The First Amended Agreed Order will require PKST to:

- a. Conduct a Remedial Investigation and Feasibility Study (RI/FS) (*see* WAC 173-340-350)⁶ for the Site, and
- b. Develop a Cleanup Action Plan (CAP) (*see* WAC 173-340-380(1))⁷ for the Site.

For a description of the process for cleaning up a contaminated site under MTCA, please refer to the enclosed fact sheet.

⁵ <https://app.leg.wa.gov/rcw/default.aspx?cite=70A.305.060>

⁶ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-350>

⁷ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-380>

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Ecology's policy is to work cooperatively with PLPs to accomplish the prompt and effective cleanup of contaminated sites. Please note that your cooperation in planning or conducting remedial actions at the Site is not an admission of guilt or liability.

Contact Information

If you have any questions regarding this letter or would like additional information regarding the cleanup of contaminated sites, please contact me at 425-466-6398 or at erik.snyder@ecy.wa.gov. Thank you for your cooperation.

Sincerely,



Erik G. Snyder
Section Manager
Toxics Cleanup Program
Headquarters

Enclosures (4):

1. Terracon 2018 Limited Site Investigation
2. Apex 2021 Phase 2 Environmental Site Investigation
3. Focus: Model Toxics Control Act Cleanup Regulation: Process for Cleanup of Hazardous Waste Sites (#94-129)
4. PLP Waiver Form

cc: Chris Bowman, O'Melveny
John Rousakis, O'Melveny
Kathryn Wyatt, ATG
Ryan Hardwick, Ecology
Amy Hargrove, Ecology
David Horne, Ecology
Kevin Kalefern, Ecology

Limited Site Investigation

Buse Timber & Sales

3812 28th Place Northeast

Everett, Snohomish County, Washington

September 17, 2018

Terracon Project No. 81187331

RIMS Project No. 18-002488-02

Prepared for:

Umpqua Bank

Coeur D Alene, Idaho

Prepared by:

Terracon Consultants, Inc.

Mountlake Terrace, Washington

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

September 17, 2018



Umpqua Bank
1233 N Northwood Center Ct
Coeur D Alene, ID 83814-6190

Attn: Mr. Michael Pereira

Re: **Limited Site Investigation**
Buse Timber & Sales
3812 28th PL NE
Everett, Snohomish County, Washington 98205
Terracon Project No. 81187362
RIMS Project No. 18-002488-02-1

Dear Mr. Pereira:

Terracon Consultants, Inc. (Terracon) is pleased to submit our report of Limited Site Investigation (LSI) activities completed at the site referenced above. The activities were completed to address the findings of the Phase I Environmental Site Assessment (ESA – Report No. 81187262) of the property dated June 20, 2018. Terracon conducted this LSI in general accordance with our proposal (proposal No. P81187331) dated June 20, 2018 and Master Environmental Services Agreement dated June 10, 2015.

Terracon has no present or contemplated future ownership interest or financial interest in the real estate that is the subject of this Environmental Assessment Report; and Terracon has no personal interest with respect to the subject matter of the Environmental Assessment Report of the parties involved and Terracon has no relationship with the property or the owners thereof which would prevent an independent analysis of the environmental or other conditions of the property.

Unless expressly authorized in writing by Umpqua Bank and Terracon, no one is permitted or intended to rely upon the findings, conclusions or recommendations found herein. This information is provided as a courtesy only and its accuracy has not been verified. The recipient accepts this information understanding that no representations or warranties are made with respect to this information and that recipient must make an independent determination of the accuracy of any information contained herein. The recipient acknowledges that Umpqua Bank has no responsibility for this information and the recipient releases Umpqua Bank from liability for any inaccuracy, mistake or other defect in this information.

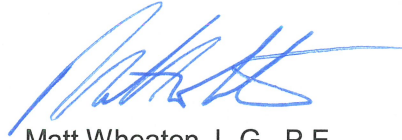


Terracon appreciates this opportunity to provide environmental services to Umpqua Bank. Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,
Terracon Consultants, Inc.

A handwritten signature in blue ink, appearing to read "Kyle L. Bennett".

Kyle Bennett, G.I.T.
Staff Geologist

A handwritten signature in blue ink, appearing to read "Matt Wheaton".

Matt Wheaton, L.G., P.E.
Department Manager

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APPENDIX A – EXHIBITS

Figure 1 – Topographic Map

Figure 2 – Site Diagram

APPENDIX B – SOIL BORING LOGS

APPENDIX C – TABLES

Table 1 - Summary of Soil Analytical Results

Table 2 - Summary of Groundwater Analytical Results

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Limited Site Investigation

Buse Timber & Sales
3812 28th Place Northeast
Everett, Washington

Terracon Project No. 81187331
September 17, 2018

1.0 SITE DESCRIPTION

The approximate 60-acre site is located at 3812 28th PI NE in Everett, Snohomish County, Washington (Snohomish County tax parcels 290504-0030-0600 and 290509-0020-1500) and consists of a lumber mill business. The site has been occupied by Buse Timber & Sales, a lumber mill company for approximately 70 years. The site contains eleven buildings and several modular sheds used as office space, storage, vehicle repair, manufacturing, and employee areas. Select lumbers are treated with a water-based anti-stain in an on-site dip tank and/or painted with a water-based end seal. There are several storage areas for the lumber and are shipped off-site by vehicles that are maintained and fueled on site. A Topographic Map showing the site location is included as Exhibit 1 and a Site Diagram is included as Exhibit 2 in Appendix A.

Terracon previously performed a Phase I ESA of the property for Umpqua Bank (Terracon Project No. 81187262, dated June 20, 2018), and identified the following:

- n Given the duration of operation of vehicle maintenance at the site and our experience with similar facilities, there is the potential for undocumented releases to have occurred in the maintenance shed area.
- n The former UST area has not been assessed for groundwater impacts, however a groundwater sample approximately 100 feet up-gradient of the area identified impacts of diesel-range hydrocarbons above cleanup levels. Given the duration of the UST operations, there is a potential for undocumented subsurface releases to have occurred.
- n The historical washdown practices in the vehicle washdown area may have resulted in undocumented releases to the subsurface.
- n Given the documented impacts of diesel-range hydrocarbons to soil and groundwater in the former fire pond area, there is a potential for remaining subsurface impacts.
- n Based on the previously documented impacts of dioxins and furans in sediment samples common to lumber mills in addition to the duration of approximately 70 years of site operation, there is potential for site-wide impact to groundwater, soil and sediments.

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Buse Timber & Sales ■ Everett, Washington

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As a part of our ESA, Terracon reviewed a Draft Phase II Environmental Site Assessment performed by Exponent in August 1998. The investigation consisted of sampling sediments in the drainage ditches surrounding the facility, sampling the storm drain system, as well as assessing soil and groundwater impacts. Samples were taken of sediment, storm drains, soil, and groundwater and were analyzed and tested for volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), and other petroleum compounds. Soil impacts of benzene are above current MTCA Method A cleanup levels were identified, in addition to groundwater impacts of vinyl chloride and diesel-range TPH above their respective current MTCA Method A cleanup levels. Some recommendations were made about AST compliance, OWSs and sediment excavation. A 2010 Phase II update was also provided and performed by Exponent. Investigations were limited only to the identified recommendations of the 1998 report. Exponent further provided recommendations of general practices but recommended no further investigation.

Based on our review of the 1998 and 2010 Exponent subsurface investigations, it appears that limited soil and groundwater sampling performed on-site identified numerous areas of soil, sediment, and groundwater impacts. These areas primarily consist of the former location of the fire pond, maintenance area and former dip tank location. Soil and groundwater appear to be impacted with diesel-range TPH above current Washington State Model Toxics Control Act (MTCA) cleanup levels. The identified 1998 dioxin concentration, expressed as 2,3,7,8 tetrachlorodibenzo-p-dioxin, also appears to be above current (2018) regulatory action levels. Furthermore, numerous other VOC, semi-VOCs (SVOC) and polychlorinated biphenyls have been identified at concentrations below MTCA cleanup levels, but given the limited number of samples collected during previous investigations and that the selected locations may not have been situated in areas sufficient to assess for potential releases, there is the potential for additional impacts to have been present at concentrations above MTCA cleanup levels in other areas of the site. Given the findings of the previous subsurface investigations, the historical site use as a lumber yard and associated impacts identified in soil, sediment and groundwater represent a REC to the site.

Based on the findings of the ESA, Terracon recommended that a subsurface investigation be completed in an effort to assess the above-referenced RECs.

2.0 SCOPE OF SERVICES

Terracon's scope of services included completion of the following tasks:

- § Perform pre-mobilization activities including, public and private underground utility clearances and preparation of a site-specific health and safety plan;
- § Advance six soil borings and collect soil and/or groundwater samples from each boring;
- § Install six temporary groundwater monitoring wells in the borings;

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- § Complete laboratory analyses of soil and groundwater samples; and
- § Prepare this Limited Site Investigation (LSI) summary report.

The objective of the scope of services for this LSI was to assess the potential presence of compounds of concern in subsurface soil and groundwater at the site that may have originated from the above-referenced RECs. The detected sampling results have been compared to the Washington State Department of Ecology (Ecology) Model Toxics Control Program (MTCA) to assess if compounds of concern exceed the applicable standards. The scope of services was not intended to identify every chemical possibly associated with the site or surrounding facilities or to establish corrective action costs.

Groundwater was not encountered or not adequate for sampling at the time of drilling in five of the six borings; therefore, groundwater samples were not collected as a part of this investigation in those five locations. In lieu of groundwater sampling, an additional soil sample was collected near the bottom of soil borings B1, B3, and B5.

2.1 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, either express or implied, regarding the findings, conclusions, or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These LSI services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal and were not restricted by ASTM E1903-11 *Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process*.

2.2 Additional Scope Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable, or not present during these services. We cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this LSI. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations, or exploratory services. The data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

2.3 Reliance

This report has been prepared for the exclusive use of Umpqua Bank, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of Umpqua Bank and Terracon. Any unauthorized distribution or reuse is at Umpqua Bank's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal, LSI report, and Terracon's Master Environmental Service Agreement (MESA). The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to Umpqua Bank and all relying parties unless otherwise agreed in writing.

3.0 FIELD INVESTIGATION

Terracon has a commitment to the safety of all its employees. As such, and in accordance with our *Incident and Injury Free*® safety goals, Terracon conducted the fieldwork under a site-specific health and safety plan developed for this project. Work was performed using the Occupational Health and Safety Administration (OSHA) Level D work attire consisting of hard hats, safety glasses, protective gloves, and protective boots. In an effort to locate underground utilities in the work area, Terracon contacted the Washington State Utility Notification Center to arrange for public underground utility clearance at the site. In addition, a private utility location service was subcontracted by Terracon to identify the locations and depths of the various utilities located near the proposed borings.

3.1 Soil Sampling

Field activities were performed in four locations: two soil borings, identified as B1 and B2, were near the vehicle maintenance building; two soil borings, identified as B3 and B4, were advanced near the former underground storage tank area and adjacent to the on-site storm drain ditch; one soil boring, identified as B5, was advanced in the location of the former fire pond and dip tank, and; one soil boring, identified as B6, was advanced near the wash-down area and dip tank. Boring locations relative to site features are depicted on Exhibit 2 of Appendix A.

Terracon field representative Jeff Dobbins mobilized to the site on August 17, 2018 to oversee the drilling of soil borings B1 through B6. B1 through B6 were advanced by Holt Services, a Washington State-licensed driller, using a truck-mounted direct-push sampler drill rig equipped with disposable acetate sample sleeves. Throughout the drilling operation, soil samples were obtained continuously (to the extent practical) from five-foot long pushes driven into the ground using a 32 hertz, percussion hammer. The steel sampling tube was extracted from the hole and the liners were removed and split open. Non-disposable sampling equipment was cleaned using a non-phosphate soap wash and potable water rinse prior to the beginning of the project and before collecting each soil sample.

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Direct-push borings were advanced to depths of approximately 10 to 20 feet below the ground surface (bgs).

Terracon field-screened soil samples for organic vapors using a calibrated photoionization detector (PID). This device provides a direct reading in parts per million (ppm) isobutylene equivalents. Upon removal of the sampler from the borehole, Terracon placed a portion of each sample in a sealable plastic bag. After a stabilization period, Terracon screened the headspace above the soil using the PID.

In addition, select soils were field-screened by a sheen test by placing soil into a shallow stainless-steel bowl of water and observing to see if a sheen emitted on top the water's surface.

A field log of each boring was maintained, including the thickness and depth of each soil unit encountered and the depth to the uppermost water table. Soil samples were observed to document soil lithology, color, and moisture content. Soils were logged in general accordance with American Society for Testing and Materials (ASTM) Practice Designation D-2488, *Standard Practice for Description of Soils (Visual-Manual Procedure)*. Exploration logs are included in Appendix B. The boring logs also include the field screening results for each soil boring.

In the absence of field indications, soil samples were collected from the depth interval most likely to be impacted, change in lithology, from the upper soil zone, at a depth equal or below the REC and/or the capillary fringe, as determined by Terracon's field representative.

A total of nine soil samples, one from each boring and one additional sample from B1, B3, and B5, were collected and submitted for laboratory analysis. Soil samples were extracted by hand using disposable gloves and placed directly into laboratory-supplied glassware.

Each sample container was labeled with the project number, date, time, boring number, and sample number. Sample containers were placed in a chilled cooler immediately after sampling, and subsequently transported to a Washington State-accredited laboratory under standard chain-of-custody procedures.

The borings were decommissioned using bentonite chips immediately upon the conclusion of field work for this investigation and capped to approximately match the existing ground surface.

3.2 Groundwater Sampling

At the time of drilling, groundwater was only observed in B1 and B2 at a depth of approximately 5 feet bgs. At the time of sampling, B1 did not produce an adequate amount of groundwater for sampling; therefore, a groundwater sample was not collected from B1.

One groundwater sample was collected from the temporary monitoring well B2, using disposable tubing and a peristaltic pump. Sample tubing intake depth was selected based on the screened interval of the well. Purging of the temporary well was attempted, as practical, based on groundwater recharge rates and volumes. Approximately one gallon of development water was removed from the well before groundwater appeared relatively free of sediment.

Please note that during sampling from temporary wells, groundwater often remains turbid and can contain suspended colloids, which may then be detected by the laboratory, potentially resulting in elevated contaminate concentrations. Therefore, without the benefit of permanent groundwater monitoring wells that are properly developed prior to groundwater sampling, groundwater analytical results may not be representative of actual on-site groundwater conditions.

The sample containers were labeled with the project number, date, time, and sample number and placed in a chilled cooler immediately after sampling. The sample containers were subsequently transported to a Washington state-certified laboratory, under standard chain-of-custody procedures.

At the completion of field activities, the temporary wells were removed from each boring and they were decommissioned using bentonite chips and capped to approximately match the existing ground surface.

4.0 RESULTS OF THE FIELD INVESTIGATION

4.1 Geology/Hydrogeology

In general, Terracon encountered gray sandy silt in the upper three feet, followed by gray silt with wood fragments to the boring termination depths. The boring logs attached in Appendix B detail the observed soil stratigraphy.

4.2 Field Screening

PID readings were not detected above 6.9 parts per million (ppm) in soil collected from the borings. Furthermore, sheens or other field indications (e.g., odors) of possible chemical impacts were not noted in any of the soils and/or purge water collected from temporary groundwater monitoring wells. The field screening results are summarized on the boring logs in Appendix B.

5.0 ANALYTICAL RESULTS

The selected soil samples and groundwater samples were analyzed for gasoline-, diesel-, and oil-range total petroleum hydrocarbons (TPH) by Northwest Method NWTPH-Gx/Dx, and volatile organic compounds (VOCs) by EPA Method 8260, semi-VOCs (SVOCs) by EPA Method 8270, polychlorinated biphenyls (PCBs) by EPA Method 8082, metals by EPA Method 6010/6020/200.8, and/or polychlorinated dibenzodioxins and polychlorinated dibenzofurans (dioxins and furans) by EPA Method 1613. Soil samples analyzed for gasoline-range TPH and VOCs were collected using EPA Method 5035 sampling kits.

Reported soil and groundwater concentrations were compared with the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use, as applicable, established under Chapter 70.105D RCW and its implementing regulation, MTCA Chapter 173-340 WAC. Where a MTCA Method A Cleanup level has not been established for a particular compound, the respective MTCA Method B Cleanup Level for cancer/non-cancer direct contact is applied for comparison. Reported soil dioxins/furans concentrations were reported in Toxicity Equivalent Factors (TEF) and compared to the mixtures of dioxins/furans established cleanup levels in accordance with WAC 173-340-708(8).

Data packages were checked for completeness immediately upon receipt from the laboratory to ensure that data and QA/QC information requested were present. Data quality was assessed by considering holding times, surrogate recovery, method blanks, matrix spike and matrix spike duplicate recovery, and detection limits. Based upon our interpretation of quality control information provided by the laboratories, it is our opinion that the overall dataset is useable as qualified for the purposes of this LSI.

5.1 Soil Analytical Results

The soil samples collected from B1-2.5 and B2-3 contained arsenic at concentrations of 35 milligrams per kilograms (mg/kg) and 41 mg/kg respectively. These concentrations exceed the respective MTCA Method A cleanup level of 20 mg/kg for arsenic.

The soil samples collected from B1-2.5, B1-6.5, and B2-3 contained chromium at concentrations of 67 mg/kg, 47 mg/kg, and 70 mg/kg respectively. The concentrations of total chromium in soil samples collected from B1 and B2 ranged from 47 mg/kg to 70 mg/kg; although these concentrations are below the MTCA Method A cleanup level of 2,000 mg/kg for total chromium, the concentration exceeds the hexavalent chromium MTCA Method A cleanup level of 19 mg/kg. The historic site use as a lumber mill indicates the potential for on-site use or source of chromium, and concentrations are most likely attributed to historic use of chromium. The highest concentration of total chromium (B2-3) was additionally analyzed for hexavalent chromium. The concentration of hexavalent chromium in B2-3 was not reported above laboratory MRLs,

therefore chromium concentrations were compared to MTCA Method A cleanup level of 2,000 mg/kg for total chromium.

The soil sample collected from B5-2.5, B5-18, and B6-3 contained concentrations of dioxins and furans. These concentrations were used to calculate the Toxicity Equivalent Factors (TEF). Since Method A cleanup levels have not been established, the TEF concentrations were compared against the MTCA Method B cleanup level for cancer direct contact of 12.8 nanograms per kilogram (ng/kg). The TEF for B5-2.5, B5-18, and B6-3 was 10.8 ng/kg, 0.499 ng/kg, and 0.718 ng/kg respectively. These concentrations were below the respective Method B cleanup level of 12.8 ng/kg.

The remaining soil samples results were either below the laboratory MRLs or below the MTCA Method A or MTCA Method B cleanup levels. The

The soil analytical results are summarized in Table 1 of Appendix C.

5.2 Groundwater Analytical Results

The groundwater sample collected from B2 contained arsenic at a concentration of 77 µg/l, which exceeds the respective MTCA Method A cleanup level of 5 µg/l.

The remaining groundwater sample results were either below the laboratory MRLs or below the MTCA Method A or MTCA Method B cleanup levels.

The groundwater analytical results are summarized in Table 2 of Appendix C.

6.0 INVESTIGATION DERIVED WASTE

One 16-gallon drum of drill cuttings and one 16-gallon drum of monitoring well purge/equipment decontamination water were containerized during the field activities. The drums have been properly disposed by a licensed disposal facility.

7.0 FINDINGS AND CONCLUSIONS

Based on the scope of services described in this report and subject to the limitations described herein, Terracon concludes the following.

Soil samples collected from B1 and B2 had concentrations of arsenic and/or chromium which exceeded their respective MTCA Method A cleanup levels. Chromated arsenicals, which includes chromated copper arsenate (CCA), is a group of pesticides containing chromium, copper, and/or arsenic that protect wood against termites, fungi and other pests that can

degrade or threaten the integrity of wood products. Chromated arsenicals-treated wood is used to produce commercial wood shake, shingles, permanent foundation support beams and other wood products, and is likely attributing to the elevated concentrations of chromium and arsenic. However, based on the additional analysis of the highest chromium concentration, the concentrations of chromium do not appear to be hexavalent chromium. Soil samples collected from B5 and B6 had concentrations of dioxins and furans. Although these concentrations are below their respective MTCA Method B cleanup level, they exceed the natural background concentrations of 5.2 ng/kg for dioxin and furan mixtures in soil per Ecology's *Natural Background for Dioxins/Furans in WA Soils*, Technical Memorandum #8 dated August 9, 2010. According to an Environmental Protection Agency (EPA) discussion on Persistent Bioaccumulative and Toxic (PBT) Chemical Program on Dioxins and Furans dated April 18, 2011, dioxin/furans are transported primarily through the air and are deposited on the surfaces of soils. Most dioxin/furans are introduced to the environment through the air as trace by-products of combustion. The historical site use as a lumber mill and on-site fire pond, it is presumed that the onsite detections in the site soils are attributed to trace by-products through air transportation and/or the direct deposition from on-site activities.

Terracon concludes that the operations at the site with a vehicle maintenance area, wash-down area, diesel UST area, fire pond and documented dioxins and furans appears to have previously contributed and may potentially continue to contribute to the release of select chemicals of concern to soils and/or groundwater; however, with the exception of arsenic in soil and groundwater it does not appear that a significant release to these areas has occurred which has contributed to a large-scale release. Although groundwater impacts were not identified, with the exception of arsenic, at concentrations exceeding the MTCA cleanup level, it should be understood that groundwater samples were not collected from other areas of the site. Regardless, soil sampling did not indicate widespread impacts that could have migrated in the local groundwater aquifer.

8.0 RECOMMENDATIONS

Based on the findings of this investigation, it appears that the arsenic concentrations identified are consistent with the current site use. While there are arsenic exceedances to the MTCA cleanup level, Terracon infers that they are limited to the site soil and groundwater within the limits of the site boundary. Therefore, unless the site use is proposed to change, Terracon does not recommend any additional investigations at this time. For a further degree of confidence with regard to onsite groundwater conditions, permanent groundwater monitoring wells would be required, although not recommended at this time.

With regards to the identified releases to soil exhibiting arsenic concentrations above MTCA action levels, a release report to Ecology is required per MTCA (Washington Administrative Code (WAC) 173-340-300 (2) (a)), which states: "Any owner or operator, who has information that a hazardous substance has been released to the environment at the owner's or operator's

Limited Site Investigation

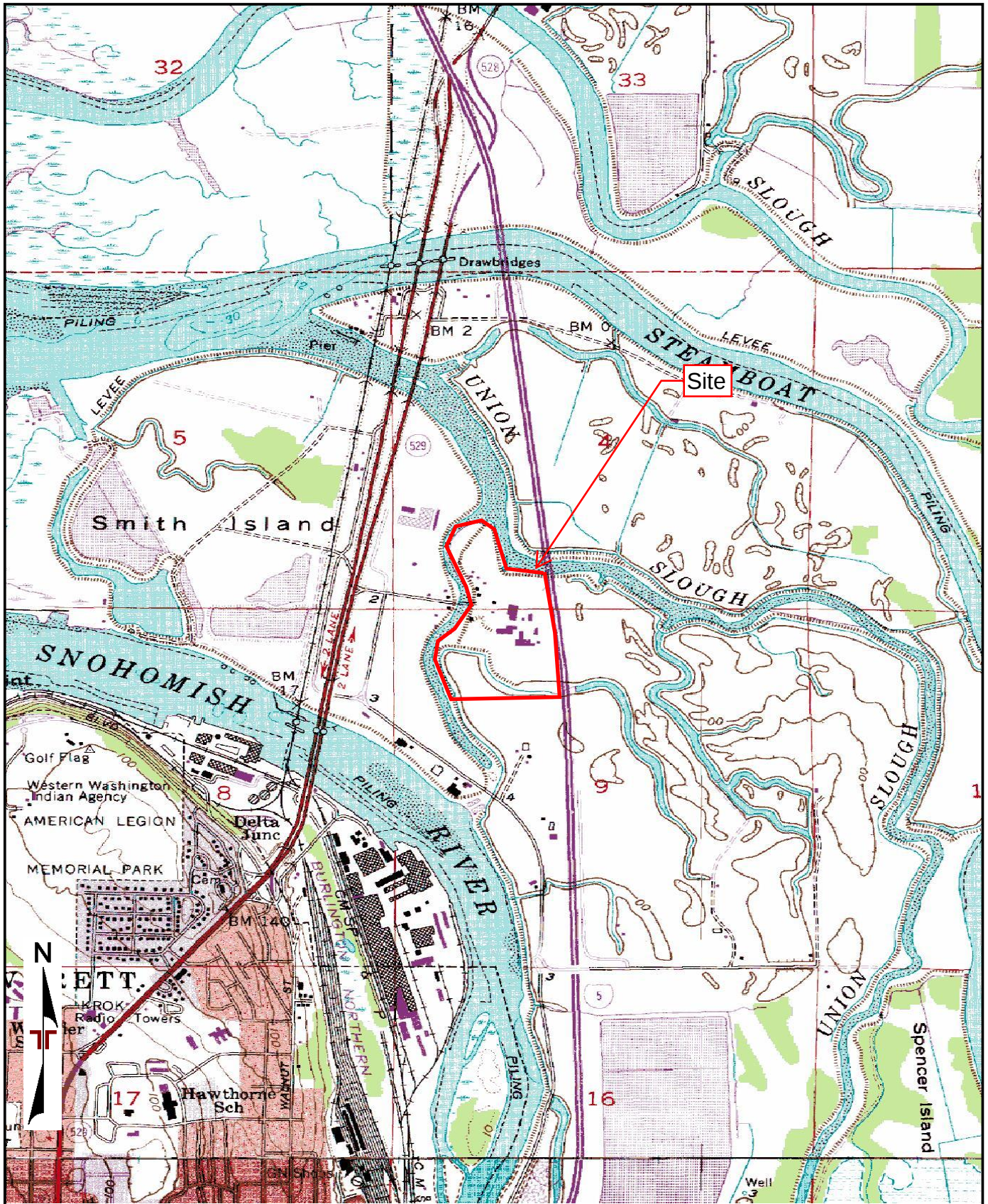
Buse Timber & Sales ■ Everett, Washington

September 17, 2018 ■ Terracon Project No. 81187331



facility and may be a threat to human health or the environment, shall report such information to the department within 90 days of discovery."

APPENDIX A – EXHIBITS



Project Manager: EAD
 Drawn by: TRB
 Checked by: MYW
 Approved by: MYW

Project No. 81187331
 Scale: 1"=2,000'
 File Name: Exhibit 1
 Date: Aug 2018

Terracon
 21905 64th Ave W, Ste 100
 Mountlake Terrace, WA 98043-2251

TOPOGRAPHIC MAP
 Buse Timber & Sales
 3812 28th PI NE
 Everett, Snohomish County, Washington

Exhibit
1

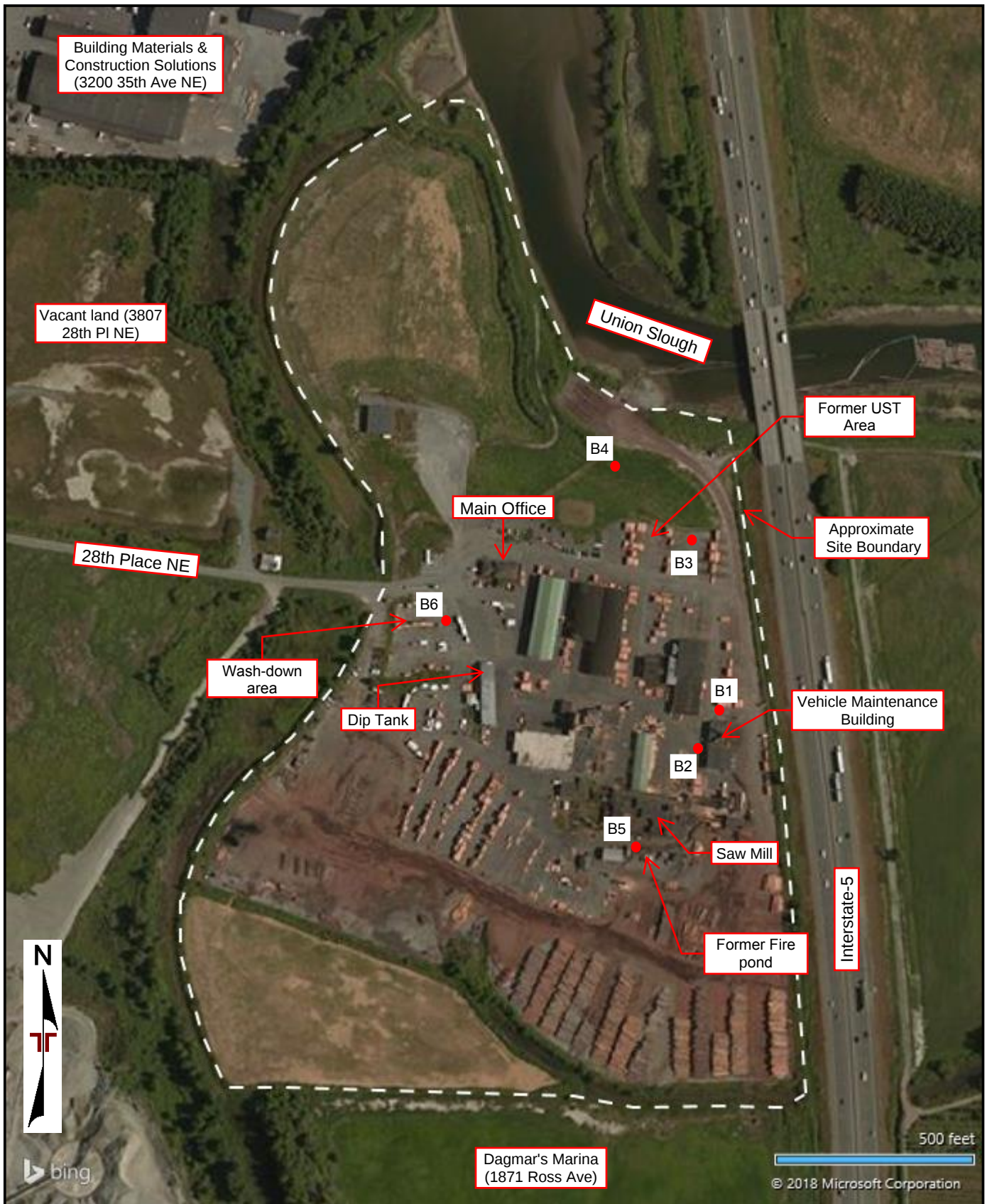


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS
NOT INTENDED FOR CONSTRUCTION PURPOSES

B1 ● Boring number and approximate location

AERIAL PHOTOGRAPHY PROVIDED
BY MICROSOFT BING MAPS

Project Manager:	EAD
Drawn by:	TRB
Checked by:	MYW
Approved by:	MYW
Project No.	81187331
Scale:	AS SHOWN
File Name:	Exhibit 2
Date:	Aug 2018

Terracon
21905 64th Ave W, Ste 100
Mountlake Terrace, WA 98043-2251

SITE DIAGRAM
Buse Timber & Sales 3812 28th PI NE Everett, Snohomish County, Washington

Exhibit
2

APPENDIX B – TABLES

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
 Buse Timber & Sales
 3812 28th Place Northeast
 Everett, Washington
 Terracon Project No. 81187331

All concentrations are in milligrams per kilogram (mg/kg)

Boring ID	Sample ID	Sample Date	Sample Depth (feet)	TPH			Metals ⁺¹						VOCs ¹		Dioxins and Furans ^o
				Gasoline-Range	Diesel-Range	Oil-Range	Mercury	Arsenic	Total Chromium	Hexavalent Chromium (Vf)	Lead	Other Metals	Acetone	Other VOCs	
MTCA Method A Cleanup Level				100	2,000	2,000	2	20	2,000	19	250	Varies	72,000*	Varies	12.8* [‡]
B1	B1-2.5	8/17/18	2.5	ND (<3.0)	ND (<28)	ND (<56)	0.034	35	67	--	57	ND	0.23	ND	--
	B1-6.5	8/17/18	6.5	ND (<3.0)	ND (<25)	91	ND (<0.020)	16	47	--	13	ND	ND (<0.050)	ND	--
B2	B2-3	8/17/18	3	ND (<3.0)	ND (<29)	ND (<58)	0.090	41	70	ND (<5.0)	31	ND	0.38	ND	--
B3	B3-6.5	8/17/18	6.5	ND (<3.0)	ND (<28)	ND (<56)	--	--	--	--	--	--	0.063	ND	--
	B3-17.5	8/17/18	17.5	ND (<3.0)	ND (<25)	ND (<50)	--	--	--	--	--	--	ND (<0.050)	ND	--
B4	B4-7	8/17/18	7	ND (<3.0)	ND (<31)	ND (<62)	--	--	--	--	--	--	ND (<0.050)	ND	--
B5	B5-2.5	8/17/18	2.5	3.5	ND (<25)	170	--	--	--	--	--	--	ND (<0.050)	ND	10.8
	B5-18	8/17/18	18	ND (<3.0)	ND (<25)	ND (<50)	--	--	--	--	--	--	ND (<0.050)	ND	0.499
B6	B6-3	8/17/18	3	ND (<3.0)	ND (<26)	58	--	--	--	--	--	--	0.23	ND	0.718

Note: Concentrations detected above laboratory reporting limits are in **BOLD** type.
 Concentrations detected above MTCA cleanup levels are in **BOLD RED** type and a shaded cell.
 Compounds with no MTCA cleanup levels established are not included. See laboratory report for full list of analytes.

- TPH - Total petroleum hydrocarbons
 VOCs - Volatile organic compounds
 MTCA - Model Toxics Control Act
 RCRA - Resource Conservation and Recovery Act
 ND - Not detected above laboratory reporting limits.
 + - RCRA 8 Metals
 * - MTCA Method B Cleanup Level - cancer/noncancer direct contact.
 ° - Toxicity equivalent concentrations in nanograms per kilogram (ng/kg)
 † - Natural background concentration for dioxin and furan mixtures in upland soils (Ecology Technical Memorandum #8, 2010)
 1 - See laboratory report for full list of analytes.

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
Buse Timber & Sales
3812 28th Place Northeast
Everett, Washington

Terracon Project No. 81187331

All concentrations are in micrograms per liter (µg/L)

Sample ID	Sample Date	TPH			Metals ^{+,1}			VOCs ¹
		Gasoline-Range	Diesel-Range	Oil-Range	Arsenic	Chromium (VI)	Other Metals	
MTCA Method A Cleanup Level		1,000	500	500	5	48	Varies	Varies
B2	8/17/18	260	450	400	77	9.2	ND	ND

Note: Concentrations detected above laboratory reporting limits are in **BOLD** type.
Concentrations above MTCA cleanup levels are in **BOLD RED** and a shaded cell.

- TPH - Total petroleum hydrocarbons
VOCs - Volatile organic compounds
RCRA - Resource Conservation and Recovery Act
MTCA - Model Toxics Control Act
ND - Not detected above laboratory reporting limits.
+ - RCRA 8 metals
1 - See laboratory report for full list of analytes.

APPENDIX C – SOIL BORING LOGS

BORING LOG NO. B1

Page 1 of 1

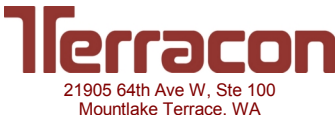
PROJECT: Buse Timber & Sales

CLIENT: Umpqua Bank
Coeur d'Alene, Idaho

SITE: 3812 28th Place Northeast
Everett, Washington

GRAPHIC LOG	LOCATION See Exhibit 2.	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE ID
	DEPTH MATERIAL DESCRIPTION					
	0.2 ASPHALT					
	0.8 FILL - SAND WITH GRAVEL (SP) , gray, moist					
	1.5 FILL - SAND (SP) , gray, moist					
	SILT (ML) , gray, moist			Hand	0.9	B1-2.5
	5.0 SAND (SP) , gray, wet	5	▽			
	6.8 SILT (ML) , gray, moist, abundant orange wood			Hand	0.0	B1-6.5
	10.0 Boring Terminated at 10 Feet	10			0.3	

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method: Direct push		Notes:	
Abandonment Method: Boring backfilled with bentonite chips upon completion.			
WATER LEVEL OBSERVATIONS	 21905 64th Ave W, Ste 100 Mountlake Terrace, WA	Boring Started: 08-17-2018	Boring Completed: 08-17-2018
▽ Depth to groundwater while drilling.		Drill Rig: Geoprobe	Driller: Holt Services, Inc
		Project No.: 81187331	Exhibit: B-1

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 81187331_LOGS.GPJ TERRACON DATATEMPLATE.GDT 9/4/18

BORING LOG NO. B2

Page 1 of 1

PROJECT: Buse Timber & Sales

CLIENT: Umpqua Bank
Coeur d'Alene, Idaho

SITE: 3812 28th Place Northeast
Everett, Washington

GRAPHIC LOG	LOCATION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE ID
	See Exhibit 2.					
	DEPTH MATERIAL DESCRIPTION					
	0.8 ASPHALT CONCRETE					
	FILL - SAND (SP) , gray, moist					
	2.5 SILT (ML) , gray, moist				1.6	B2-3
	5.0 SAND (SP) , minor silt, gray, wet	5	▽		0.6	
	6.5 SILT (ML) , gray, moist, with orange wood					
	10.0 Boring Terminated at 10 Feet	10			0.1	

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method: Direct push		Notes:	
Abandonment Method: Boring backfilled with bentonite chips upon completion.			
WATER LEVEL OBSERVATIONS		Boring Started: 08-17-2018	Boring Completed: 08-17-2018
▽ Depth to groundwater while drilling.		Drill Rig: Geoprobe	Driller: Holt Services, Inc.
		Project No.: 81187331	Exhibit: B-2

Terracon
21905 64th Ave W, Ste 100
Mountlake Terrace, WA

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 81187331_LOGS.GPJ TERRACON_DATATEMPLATE.GDT 9/4/18

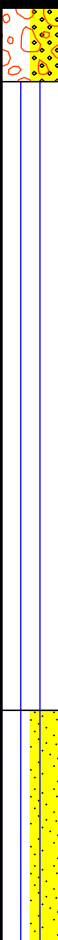
BORING LOG NO. B3

Page 1 of 1

PROJECT: Buse Timber & Sales

CLIENT: Umpqua Bank
Coeur d'Alene, Idaho

SITE: 3812 28th Place Northeast
Everett, Washington

GRAPHIC LOG	LOCATION	See Exhibit 2.		DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE ID
	DEPTH	MATERIAL DESCRIPTION						
	0.2	ASPHALT						
	1.8	FILL - WELL GRADED GRAVEL WITH SAND (GW) , tan, slightly moist						
		SILT (ML) , gray, moist, smelly					0.8	
		abundant orange and maroon wood		5			0.3	B3-6.5
		minor wood		10			0.0	
							0.4	
							1.0	
	15.0	SILT WITH SAND (ML) , gray, moist		15			0.4	
							0.1	B3-17.5
	20.0	Boring Terminated at 20 Feet		20				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct push

Notes:

Abandonment Method:
Boring backfilled with bentonite chips upon completion.

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
21905 64th Ave W, Ste 100
Mountlake Terrace, WA

Boring Started: 08-17-2018

Drill Rig: Geoprobe

Project No.: 81187331

Boring Completed: 08-17-2018

Driller: Holt Services, Inc.

Exhibit: B-3

BORING LOG NO. B4

Page 1 of 1

PROJECT: Buse Timber & Sales

CLIENT: Umpqua Bank
Coeur d'Alene, Idaho

SITE: 3812 28th Place Northeast
Everett, Washington

GRAPHIC LOG	LOCATION	See Exhibit 2.		DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE ID
	DEPTH	MATERIAL DESCRIPTION						
	1.5	TOPSOIL , tan, dry						
		SILT (ML) , gray, moist, abundant vegetation					0.0	
		orange mottling					0.0	
		smelly, wood		5				
							0.7	B4-7
		no odor, no wood		10			0.2	
							0.0	
		trace sand		15			0.0	
							0.0	
	20.0			20				
		Boring Terminated at 20 Feet						

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method: Direct push		Notes:	
Abandonment Method: Boring backfilled with bentonite chips upon completion.			
WATER LEVEL OBSERVATIONS		Boring Started: 08-17-2018	Boring Completed: 08-17-2018
Groundwater not encountered		Drill Rig: Geoprobe	Driller: Holt Services, Inc.
		Project No.: 81187331	Exhibit: B-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 81187331_LOGS.GPJ TERRACON_DATATEMPLATE.GDT 9/4/18

BORING LOG NO. B5

Page 1 of 1

PROJECT: Buse Timber & Sales

CLIENT: Umpqua Bank
Coeur d'Alene, Idaho

SITE: 3812 28th Place Northeast
Everett, Washington

GRAPHIC LOG	LOCATION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE ID
	See Exhibit 2.					
	DEPTH MATERIAL DESCRIPTION					
	0.5 TOPSOIL					
	FILL - SAND (SP) , tan, dry grading down to moist					
	2.0 SILT (ML) , gray, moist				6.9	B5-2.5
	smelly, abundant wood from 5' to 6'	5			2.9	
	orange wood	10			0.0	
	trace sand, trace orange wood, no odor	15				
					0.0	B5-18
	20.0	20				
	Boring Terminated at 20 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method: Direct push		Notes:	
Abandonment Method: Boring backfilled with bentonite chips upon completion.			
WATER LEVEL OBSERVATIONS	 21905 64th Ave W, Ste 100 Mountlake Terrace, WA	Boring Started: 08-17-2018	Boring Completed: 08-17-2018
<i>Groundwater not encountered</i>		Drill Rig: Geoprobe	Driller: Holt Services, Inc.
		Project No.: 81187331	Exhibit: B-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 81187331_LOGS.GPJ TERRACON_DATATEMPLATE.GDT 9/4/18

BORING LOG NO. B6

Page 1 of 1

PROJECT: Buse Timber & Sales

CLIENT: Umpqua Bank
Coeur d'Alene, Idaho

SITE: 3812 28th Place Northeast
Everett, Washington

GRAPHIC LOG	LOCATION	See Exhibit 2.		DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE ID
	DEPTH	MATERIAL DESCRIPTION						
	0.5	ASPHALT						
	2.0	FILL - SAND WITH GRAVEL (SP) , gray, moist					0.7	
		SILT (ML) , gray, moist, smelly				Hand	1.7	B6-3
		abundant wood		5			0.0	
				10			0.2	
	11.0							
	11.5	SILTY SAND (SM) , gray, moist, no wood, no odor						
		SILT (ML) , gray, moist					0.0	
				15			1.0	
		some sand					0.0	
	20.0			20				
		Boring Terminated at 20 Feet						

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct push

Notes:

Abandonment Method:
Boring backfilled with bentonite chips upon completion.

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
21905 64th Ave W, Ste 100
Mountlake Terrace, WA

Boring Started: 08-17-2018

Drill Rig: Geoprobe

Project No.: 81187331

Boring Completed: 08-17-2018

Driller: Holt Services, Inc.

Exhibit: B-6

APPENDIX D – ANALYTICAL REPORT



September 14, 2018

Mr. Eric Dubcak
Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043

Dear Mr. Dubcak,

On August 17th, 10 samples were received by our laboratory and assigned our laboratory project number EV18080100. The project was identified as your 81187331. 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

Glen Perry
Technical Manager



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043

DATE: 9/14/2018

ALS JOB#: EV18080100

ALS SAMPLE#: EV18080100-01

CLIENT CONTACT: Eric Dubcak

DATE RECEIVED: 08/17/2018

CLIENT PROJECT: 81187331

COLLECTION DATE: 8/17/2018 8:05:00 AM

CLIENT SAMPLE ID B6-3

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/20/2018	JMK
TPH-Diesel Range	NWTPH-DX	U	26	1	MG/KG	08/22/2018	EBS
TPH-Oil Range	NWTPH-DX	58	50	1	MG/KG	08/22/2018	EBS
Dichlorodifluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Vinyl Chloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Tetrachloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trichlorofluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Disulfide	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Acetone	EPA-8260	0.23	0.17	1	MG/KG	08/21/2018	DLC
1,1-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Methylene Chloride	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Acrylonitrile	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Butanone	EPA-8260	U	0.13	1	MG/KG	08/21/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Benzene	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Trichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Dibromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromodichloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Toluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Hexanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,3-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC

**CERTIFICATE OF ANALYSIS**

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043

DATE: 9/14/2018
ALS JOB#: EV18080100
ALS SAMPLE#: EV18080100-01

CLIENT CONTACT: Eric Dubcak
CLIENT PROJECT: 81187331
CLIENT SAMPLE ID: B6-3

DATE RECEIVED: 08/17/2018
COLLECTION DATE: 8/17/2018 8:05:00 AM
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Tetrachloroethylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Dibromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromoethane	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Chlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Ethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
m,p-Xylene	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Styrene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
o-Xylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromoform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Isopropylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Propyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
T-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
S-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
P-Isopropyltoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Butylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Hexachlorobutadiene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Naphthalene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Pyridine	EPA-8270	U	0.20	1	MG/KG	08/23/2018	JMK
N-Nitrosodimethylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Phenol	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Aniline	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.26	1	MG/KG	08/23/2018	JMK
2-Chlorophenol	EPA-8270	U	0.26	1	MG/KG	08/23/2018	JMK
1,3-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
1,4-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-01
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 8:05:00 AM
CLIENT SAMPLE ID	B6-3	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Benzyl Alcohol	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
1,2-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	0.33	1	MG/KG	08/23/2018	JMK
3&4-Methylphenol	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
Hexachloroethane	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Nitrobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Isophorone	EPA-8270	U	0.19	1	MG/KG	08/23/2018	JMK
2-Nitrophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dimethylphenol	EPA-8270	U	0.17	1	MG/KG	08/23/2018	JMK
Benzoic Acid	EPA-8270	U	1.9	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane	EPA-8270	U	0.32	1	MG/KG	08/23/2018	JMK
2,4-Dichlorophenol	EPA-8270	U	0.65	1	MG/KG	08/23/2018	JMK
1,2,4-Trichlorobenzene	EPA-8270	U	0.19	1	MG/KG	08/23/2018	JMK
Naphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chloroaniline	EPA-8270	U	1.5	1	MG/KG	08/23/2018	JMK
2,6-Dichlorophenol	EPA-8270	U	0.49	1	MG/KG	08/23/2018	JMK
Hexachlorobutadiene	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
4-Chloro-3-Methylphenol	EPA-8270	U	0.86	1	MG/KG	08/23/2018	JMK
2-Methylnaphthalene	EPA-8270	U	0.41	1	MG/KG	08/23/2018	JMK
1-Methylnaphthalene	EPA-8270	U	0.47	1	MG/KG	08/23/2018	JMK
Hexachlorocyclopentadiene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,6-Trichlorophenol	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
2,4,5-Trichlorophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Chloronaphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Nitroaniline	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dimethylphthalate	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
2,6-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3-Nitroaniline	EPA-8270	U	1.5	1	MG/KG	08/23/2018	JMK
2,4-Dinitrophenol	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
4-Nitrophenol	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
Dibenzofuran	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
Diethylphthalate	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Fluorene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-01
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 8:05:00 AM
CLIENT SAMPLE ID	B6-3	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Chlorophenyl-Phenylether	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
4-Nitroaniline	EPA-8270	U	0.34	1	MG/KG	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
N-Nitrosodiphenylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Azobenzene	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
4-Bromophenyl-Phenylether	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Hexachlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pentachlorophenol	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
Phenanthrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Carbazole	EPA-8270	U	0.29	1	MG/KG	08/23/2018	JMK
Di-N-Butylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Butylbenzylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3,3-Dichlorobenzidine	EPA-8270	U	0.45	1	MG/KG	08/23/2018	JMK
Benzo[A]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Chrysene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Di-N-Octylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[B]Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[K]Fluoranthene	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Benzo[A]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	74.9	08/20/2018	JMK
C25	NWTPH-DX	78.5	08/22/2018	EBS
1,2-Dichloroethane-d4	EPA-8260	99.8	08/20/2018	DLC
1,2-Dichloroethane-d4	EPA-8260	96.9	08/21/2018	DLC
Toluene-d8	EPA-8260	111	08/20/2018	DLC
Toluene-d8	EPA-8260	103	08/21/2018	DLC
4-Bromofluorobenzene	EPA-8260	99.7	08/20/2018	DLC
4-Bromofluorobenzene	EPA-8260	84.7	08/21/2018	DLC
2-Fluorophenol	EPA-8270	108	08/23/2018	JMK
Phenol-d5	EPA-8270	104	08/23/2018	JMK

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-01
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 8:05:00 AM
CLIENT SAMPLE ID	B6-3	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
Nitrobenzene-d5	EPA-8270	88.1	08/23/2018	JMK
2-Fluorobiphenyl	EPA-8270	84.0	08/23/2018	JMK
2,4,6-Tribromophenol	EPA-8270	93.7	08/23/2018	JMK
Terphenyl-d14	EPA-8270	93.8	08/23/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS JOB#: EV18080100
ALS SAMPLE#: EV18080100-02
CLIENT CONTACT: Eric Dubcak
DATE RECEIVED: 08/17/2018
CLIENT PROJECT: 81187331
COLLECTION DATE: 8/17/2018 9:50:00 AM
CLIENT SAMPLE ID: B4-7
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/20/2018	JMK
TPH-Diesel Range	NWTPH-DX	U	31	1	MG/KG	08/22/2018	EBS
TPH-Oil Range	NWTPH-DX	U	62	1	MG/KG	08/22/2018	EBS
Dichlorodifluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Vinyl Chloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Tetrachloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trichlorofluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Disulfide	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Acetone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Methylene Chloride	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Acrylonitrile	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Butanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Benzene	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Trichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Dibromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromodichloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Toluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Hexanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,3-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Tetrachloroethylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-02
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 9:50:00 AM
CLIENT SAMPLE ID	B4-7	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dibromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromoethane	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Chlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Ethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
m,p-Xylene	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Styrene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
o-Xylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromoform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Isopropylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Propyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
T-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
S-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
P-Isopropyltoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Butylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Hexachlorobutadiene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Naphthalene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Pyridine	EPA-8270	U	0.20	1	MG/KG	08/23/2018	JMK
N-Nitrosodimethylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Phenol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
Aniline	EPA-8270	U	0.15	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.31	1	MG/KG	08/23/2018	JMK
2-Chlorophenol	EPA-8270	U	0.32	1	MG/KG	08/23/2018	JMK
1,3-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
1,4-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzyl Alcohol	EPA-8270	U	0.17	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-02
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 9:50:00 AM
CLIENT SAMPLE ID	B4-7	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Methylphenol	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	0.41	1	MG/KG	08/23/2018	JMK
3&4-Methylphenol	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine	EPA-8270	U	0.31	1	MG/KG	08/23/2018	JMK
Hexachloroethane	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Nitrobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Isophorone	EPA-8270	U	0.23	1	MG/KG	08/23/2018	JMK
2-Nitrophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dimethylphenol	EPA-8270	U	0.21	1	MG/KG	08/23/2018	JMK
Benzoic Acid	EPA-8270	U	2.3	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane	EPA-8270	U	0.39	1	MG/KG	08/23/2018	JMK
2,4-Dichlorophenol	EPA-8270	U	0.80	1	MG/KG	08/23/2018	JMK
1,2,4-Trichlorobenzene	EPA-8270	U	0.23	1	MG/KG	08/23/2018	JMK
Naphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chloroaniline	EPA-8270	U	1.8	1	MG/KG	08/23/2018	JMK
2,6-Dichlorophenol	EPA-8270	U	0.60	1	MG/KG	08/23/2018	JMK
Hexachlorobutadiene	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
4-Chloro-3-Methylphenol	EPA-8270	U	1.1	1	MG/KG	08/23/2018	JMK
2-Methylnaphthalene	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
1-Methylnaphthalene	EPA-8270	U	0.58	1	MG/KG	08/23/2018	JMK
Hexachlorocyclopentadiene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,6-Trichlorophenol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
2,4,5-Trichlorophenol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
2-Chloronaphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Nitroaniline	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dimethylphthalate	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
2,6-Dinitrotoluene	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Acenaphthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3-Nitroaniline	EPA-8270	U	1.9	1	MG/KG	08/23/2018	JMK
2,4-Dinitrophenol	EPA-8270	U	0.17	1	MG/KG	08/23/2018	JMK
4-Nitrophenol	EPA-8270	U	0.18	1	MG/KG	08/23/2018	JMK
Dibenzofuran	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
2,4-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol	EPA-8270	U	0.16	1	MG/KG	08/23/2018	JMK
Diethylphthalate	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
Fluorene	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
4-Chlorophenyl-Phenylether	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-02
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 9:50:00 AM
CLIENT SAMPLE ID	B4-7	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Nitroaniline	EPA-8270	U	0.41	1	MG/KG	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
N-Nitrosodiphenylamine	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Azobenzene	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
4-Bromophenyl-Phenylether	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Hexachlorobenzene	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Pentachlorophenol	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
Phenanthrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Carbazole	EPA-8270	U	0.35	1	MG/KG	08/23/2018	JMK
Di-N-Butylphthalate	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Butylbenzylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3,3-Dichlorobenzidine	EPA-8270	U	0.56	1	MG/KG	08/23/2018	JMK
Benzo[A]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Chrysene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Di-N-Octylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[B]Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[K]Fluoranthene	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
Benzo[A]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	70.3	08/20/2018	JMK
C25	NWTPH-DX	70.6	08/22/2018	EBS
1,2-Dichloroethane-d4	EPA-8260	95.6	08/20/2018	DLC
Toluene-d8	EPA-8260	110	08/20/2018	DLC
4-Bromofluorobenzene	EPA-8260	95.2	08/20/2018	DLC
2-Fluorophenol	EPA-8270	103	08/23/2018	JMK
Phenol-d5	EPA-8270	95.0	08/23/2018	JMK
Nitrobenzene-d5	EPA-8270	86.5	08/23/2018	JMK
2-Fluorobiphenyl	EPA-8270	83.0	08/23/2018	JMK
2,4,6-Tribromophenol	EPA-8270	88.9	08/23/2018	JMK
Terphenyl-d14	EPA-8270	89.6	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-02
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 9:50:00 AM
CLIENT SAMPLE ID	B4-7	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-03
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 11:05:00 AM
CLIENT SAMPLE ID	B3-6.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/20/2018	JMK
TPH-Diesel Range	NWTPH-DX	U	28	1	MG/KG	08/22/2018	EBS
TPH-Oil Range	NWTPH-DX	U	56	1	MG/KG	08/22/2018	EBS
Dichlorodifluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Vinyl Chloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Tetrachloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trichlorofluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Disulfide	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Acetone	EPA-8260	0.063	0.050	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Methylene Chloride	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Acrylonitrile	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Butanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Benzene	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Trichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Dibromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromodichloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Toluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Hexanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,3-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Tetrachloroethylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-03
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 11:05:00 AM
CLIENT SAMPLE ID	B3-6.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dibromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromoethane	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Chlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Ethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
m,p-Xylene	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Styrene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
o-Xylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromoform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Isopropylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Propyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
T-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
S-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
P-Isopropyltoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Butylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Hexachlorobutadiene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Naphthalene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Pyridine	EPA-8270	U	0.20	1	MG/KG	08/23/2018	JMK
N-Nitrosodimethylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Phenol	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Aniline	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.27	1	MG/KG	08/23/2018	JMK
2-Chlorophenol	EPA-8270	U	0.27	1	MG/KG	08/23/2018	JMK
1,3-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
1,4-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzyl Alcohol	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-03
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 11:05:00 AM
CLIENT SAMPLE ID	B3-6.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	0.35	1	MG/KG	08/23/2018	JMK
3&4-Methylphenol	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine	EPA-8270	U	0.26	1	MG/KG	08/23/2018	JMK
Hexachloroethane	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Nitrobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Isophorone	EPA-8270	U	0.20	1	MG/KG	08/23/2018	JMK
2-Nitrophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dimethylphenol	EPA-8270	U	0.18	1	MG/KG	08/23/2018	JMK
Benzoic Acid	EPA-8270	U	2.0	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane	EPA-8270	U	0.34	1	MG/KG	08/23/2018	JMK
2,4-Dichlorophenol	EPA-8270	U	0.68	1	MG/KG	08/23/2018	JMK
1,2,4-Trichlorobenzene	EPA-8270	U	0.20	1	MG/KG	08/23/2018	JMK
Naphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chloroaniline	EPA-8270	U	1.6	1	MG/KG	08/23/2018	JMK
2,6-Dichlorophenol	EPA-8270	U	0.51	1	MG/KG	08/23/2018	JMK
Hexachlorobutadiene	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
4-Chloro-3-Methylphenol	EPA-8270	U	0.90	1	MG/KG	08/23/2018	JMK
2-Methylnaphthalene	EPA-8270	U	0.43	1	MG/KG	08/23/2018	JMK
1-Methylnaphthalene	EPA-8270	U	0.49	1	MG/KG	08/23/2018	JMK
Hexachlorocyclopentadiene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,6-Trichlorophenol	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
2,4,5-Trichlorophenol	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
2-Chloronaphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Nitroaniline	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dimethylphthalate	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
2,6-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3-Nitroaniline	EPA-8270	U	1.6	1	MG/KG	08/23/2018	JMK
2,4-Dinitrophenol	EPA-8270	U	0.15	1	MG/KG	08/23/2018	JMK
4-Nitrophenol	EPA-8270	U	0.15	1	MG/KG	08/23/2018	JMK
Dibenzofuran	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
Diethylphthalate	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Fluorene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chlorophenyl-Phenylether	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-03
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 11:05:00 AM
CLIENT SAMPLE ID	B3-6.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Nitroaniline	EPA-8270	U	0.35	1	MG/KG	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
N-Nitrosodiphenylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Azobenzene	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
4-Bromophenyl-Phenylether	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Hexachlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pentachlorophenol	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
Phenanthrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Carbazole	EPA-8270	U	0.30	1	MG/KG	08/23/2018	JMK
Di-N-Butylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Butylbenzylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3,3-Dichlorobenzidine	EPA-8270	U	0.48	1	MG/KG	08/23/2018	JMK
Benzo[A]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Chrysene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Di-N-Octylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[B]Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[K]Fluoranthene	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Benzo[A]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	68.4	08/20/2018	JMK
C25	NWTPH-DX	76.0	08/22/2018	EBS
1,2-Dichloroethane-d4	EPA-8260	99.7	08/20/2018	DLC
Toluene-d8	EPA-8260	109	08/20/2018	DLC
4-Bromofluorobenzene	EPA-8260	93.3	08/20/2018	DLC
2-Fluorophenol	EPA-8270	104	08/23/2018	JMK
Phenol-d5	EPA-8270	102	08/23/2018	JMK
Nitrobenzene-d5	EPA-8270	86.6	08/23/2018	JMK
2-Fluorobiphenyl	EPA-8270	81.6	08/23/2018	JMK
2,4,6-Tribromophenol	EPA-8270	89.8	08/23/2018	JMK
Terphenyl-d14	EPA-8270	89.2	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-03
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 11:05:00 AM
CLIENT SAMPLE ID	B3-6.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS JOB#: EV18080100
ALS SAMPLE#: EV18080100-04
CLIENT CONTACT: Eric Dubcak
DATE RECEIVED: 08/17/2018
CLIENT PROJECT: 81187331
COLLECTION DATE: 8/17/2018 11:25:00 AM
CLIENT SAMPLE ID: B3-17.5
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/20/2018	JMK
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	08/22/2018	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	08/22/2018	EBS
Dichlorodifluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Vinyl Chloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Tetrachloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trichlorofluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Disulfide	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Acetone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Methylene Chloride	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Acrylonitrile	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Butanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Benzene	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Trichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Dibromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromodichloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Toluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Hexanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,3-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Tetrachloroethylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-04
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 11:25:00 AM
CLIENT SAMPLE ID	B3-17.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dibromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromoethane	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Chlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Ethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
m,p-Xylene	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Styrene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
o-Xylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromoform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Isopropylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Propyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
T-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
S-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
P-Isopropyltoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Butylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Hexachlorobutadiene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Naphthalene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Pyridine	EPA-8270	U	0.20	1	MG/KG	08/23/2018	JMK
N-Nitrosodimethylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Phenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Aniline	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
2-Chlorophenol	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
1,3-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
1,4-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzyl Alcohol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-04
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 11:25:00 AM
CLIENT SAMPLE ID	B3-17.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	0.32	1	MG/KG	08/23/2018	JMK
3&4-Methylphenol	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
Hexachloroethane	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Nitrobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Isophorone	EPA-8270	U	0.18	1	MG/KG	08/23/2018	JMK
2-Nitrophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dimethylphenol	EPA-8270	U	0.16	1	MG/KG	08/23/2018	JMK
Benzoic Acid	EPA-8270	U	1.8	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane	EPA-8270	U	0.30	1	MG/KG	08/23/2018	JMK
2,4-Dichlorophenol	EPA-8270	U	0.62	1	MG/KG	08/23/2018	JMK
1,2,4-Trichlorobenzene	EPA-8270	U	0.18	1	MG/KG	08/23/2018	JMK
Naphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chloroaniline	EPA-8270	U	1.4	1	MG/KG	08/23/2018	JMK
2,6-Dichlorophenol	EPA-8270	U	0.46	1	MG/KG	08/23/2018	JMK
Hexachlorobutadiene	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
4-Chloro-3-Methylphenol	EPA-8270	U	0.81	1	MG/KG	08/23/2018	JMK
2-Methylnaphthalene	EPA-8270	U	0.39	1	MG/KG	08/23/2018	JMK
1-Methylnaphthalene	EPA-8270	U	0.45	1	MG/KG	08/23/2018	JMK
Hexachlorocyclopentadiene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,6-Trichlorophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,5-Trichlorophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Chloronaphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Nitroaniline	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dimethylphthalate	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
2,6-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3-Nitroaniline	EPA-8270	U	1.5	1	MG/KG	08/23/2018	JMK
2,4-Dinitrophenol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
4-Nitrophenol	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
Dibenzofuran	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
Diethylphthalate	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Fluorene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chlorophenyl-Phenylether	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-04
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 11:25:00 AM
CLIENT SAMPLE ID	B3-17.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Nitroaniline	EPA-8270	U	0.32	1	MG/KG	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
N-Nitrosodiphenylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Azobenzene	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
4-Bromophenyl-Phenylether	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Hexachlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pentachlorophenol	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
Phenanthrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Carbazole	EPA-8270	U	0.27	1	MG/KG	08/23/2018	JMK
Di-N-Butylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Butylbenzylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3,3-Dichlorobenzidine	EPA-8270	U	0.43	1	MG/KG	08/23/2018	JMK
Benzo[A]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Chrysene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Di-N-Octylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[B]Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[K]Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[A]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	77.7	08/20/2018	JMK
C25	NWTPH-DX	81.5	08/22/2018	EBS
1,2-Dichloroethane-d4	EPA-8260	97.3	08/20/2018	DLC
Toluene-d8	EPA-8260	106	08/20/2018	DLC
4-Bromofluorobenzene	EPA-8260	91.1	08/20/2018	DLC
2-Fluorophenol	EPA-8270	99.7	08/23/2018	JMK
Phenol-d5	EPA-8270	96.6	08/23/2018	JMK
Nitrobenzene-d5	EPA-8270	83.7	08/23/2018	JMK
2-Fluorobiphenyl	EPA-8270	78.6	08/23/2018	JMK
2,4,6-Tribromophenol	EPA-8270	82.9	08/23/2018	JMK
Terphenyl-d14	EPA-8270	87.3	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-04
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 11:25:00 AM
CLIENT SAMPLE ID	B3-17.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-05
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 2:35:00 PM
CLIENT SAMPLE ID	B1-6.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/20/2018	JMK
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	08/22/2018	EBS
TPH-Oil Range	NWTPH-DX	91	50	1	MG/KG	08/22/2018	EBS
Dichlorodifluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Vinyl Chloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Tetrachloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trichlorofluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Disulfide	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Acetone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Methylene Chloride	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Acrylonitrile	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Butanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Benzene	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Trichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Dibromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromodichloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Toluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Hexanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,3-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Tetrachloroethylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-05
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 2:35:00 PM
CLIENT SAMPLE ID	B1-6.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dibromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromoethane	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Chlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Ethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
m,p-Xylene	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Styrene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
o-Xylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromoform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Isopropylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Propyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
T-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
S-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
P-Isopropyltoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Butylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Hexachlorobutadiene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Naphthalene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Pyridine	EPA-8270	U	0.20	1	MG/KG	08/23/2018	JMK
N-Nitrosodimethylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Phenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Aniline	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
2-Chlorophenol	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
1,3-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
1,4-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzyl Alcohol	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS JOB#: EV18080100
ALS SAMPLE#: EV18080100-05
CLIENT CONTACT: Eric Dubcak
DATE RECEIVED: 08/17/2018
CLIENT PROJECT: 81187331
COLLECTION DATE: 8/17/2018 2:35:00 PM
CLIENT SAMPLE ID: B1-6.5
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	0.30	1	MG/KG	08/23/2018	JMK
3&4-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
Hexachloroethane	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Nitrobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Isophorone	EPA-8270	U	0.17	1	MG/KG	08/23/2018	JMK
2-Nitrophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dimethylphenol	EPA-8270	U	0.15	1	MG/KG	08/23/2018	JMK
Benzoic Acid	EPA-8270	U	1.7	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane	EPA-8270	U	0.29	1	MG/KG	08/23/2018	JMK
2,4-Dichlorophenol	EPA-8270	U	0.58	1	MG/KG	08/23/2018	JMK
1,2,4-Trichlorobenzene	EPA-8270	U	0.17	1	MG/KG	08/23/2018	JMK
Naphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chloroaniline	EPA-8270	U	1.3	1	MG/KG	08/23/2018	JMK
2,6-Dichlorophenol	EPA-8270	U	0.43	1	MG/KG	08/23/2018	JMK
Hexachlorobutadiene	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
4-Chloro-3-Methylphenol	EPA-8270	U	0.76	1	MG/KG	08/23/2018	JMK
2-Methylnaphthalene	EPA-8270	U	0.36	1	MG/KG	08/23/2018	JMK
1-Methylnaphthalene	EPA-8270	U	0.42	1	MG/KG	08/23/2018	JMK
Hexachlorocyclopentadiene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,6-Trichlorophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,5-Trichlorophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Chloronaphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Nitroaniline	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dimethylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,6-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3-Nitroaniline	EPA-8270	U	1.4	1	MG/KG	08/23/2018	JMK
2,4-Dinitrophenol	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
4-Nitrophenol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
Dibenzofuran	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Diethylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Fluorene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chlorophenyl-Phenylether	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-05
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 2:35:00 PM
CLIENT SAMPLE ID	B1-6.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Nitroaniline	EPA-8270	U	0.30	1	MG/KG	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
N-Nitrosodiphenylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Azobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Bromophenyl-Phenylether	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Hexachlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pentachlorophenol	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
Phenanthrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Carbazole	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
Di-N-Butylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Butylbenzylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3,3-Dichlorobenzidine	EPA-8270	U	0.40	1	MG/KG	08/23/2018	JMK
Benzo[A]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Chrysene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Di-N-Octylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[B]Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[K]Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[A]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1254	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
Mercury	EPA-7471	U	0.020	1	MG/KG	08/23/2018	RAL
Arsenic	EPA-6020	16	0.78	1	MG/KG	08/22/2018	RAL
Cadmium	EPA-6020	U	0.24	1	MG/KG	08/22/2018	RAL
Chromium	EPA-6020	47	0.39	1	MG/KG	08/22/2018	RAL
Lead	EPA-6020	13	0.25	1	MG/KG	08/22/2018	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
CLIENT CONTACT:	Eric Dubcak	ALS JOB#:	EV18080100
CLIENT PROJECT:	81187331	ALS SAMPLE#:	EV18080100-05
CLIENT SAMPLE ID	B1-6.5	DATE RECEIVED:	08/17/2018
		COLLECTION DATE:	8/17/2018 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
TFT	NWTPH-GX	61.7	08/20/2018	JMK
C25	NWTPH-DX	82.8	08/22/2018	EBS
1,2-Dichloroethane-d4	EPA-8260	99.8	08/20/2018	DLC
Toluene-d8	EPA-8260	110	08/20/2018	DLC
4-Bromofluorobenzene	EPA-8260	96.3	08/20/2018	DLC
2-Fluorophenol	EPA-8270	99.2	08/23/2018	JMK
Phenol-d5	EPA-8270	97.6	08/23/2018	JMK
Nitrobenzene-d5	EPA-8270	84.8	08/23/2018	JMK
2-Fluorobiphenyl	EPA-8270	80.6	08/23/2018	JMK
2,4,6-Tribromophenol	EPA-8270	88.4	08/23/2018	JMK
Terphenyl-d14	EPA-8270	87.5	08/23/2018	JMK
TCMX	EPA-8082	97.2	08/20/2018	JMK
DCB	EPA-8082	85.1	08/20/2018	JMK

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: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS JOB#: EV18080100
ALS SAMPLE#: EV18080100-06
CLIENT CONTACT: Eric Dubcak
DATE RECEIVED: 08/17/2018
CLIENT PROJECT: 81187331
COLLECTION DATE: 8/17/2018 2:30:00 PM
CLIENT SAMPLE ID: B1-2.5
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/20/2018	JMK
TPH-Diesel Range	NWTPH-DX	U	28	1	MG/KG	08/22/2018	EBS
TPH-Oil Range	NWTPH-DX	U	56	1	MG/KG	08/22/2018	EBS
Dichlorodifluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Vinyl Chloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Tetrachloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trichlorofluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Disulfide	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Acetone	EPA-8260	0.23	0.20	1	MG/KG	08/21/2018	DLC
1,1-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Methylene Chloride	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Acrylonitrile	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Butanone	EPA-8260	U	0.15	1	MG/KG	08/21/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Benzene	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Trichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Dibromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromodichloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Toluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Hexanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,3-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Tetrachloroethylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-06
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 2:30:00 PM
CLIENT SAMPLE ID	B1-2.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dibromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromoethane	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Chlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Ethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
m,p-Xylene	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Styrene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
o-Xylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromoform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Isopropylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Propyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
T-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
S-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
P-Isopropyltoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Butylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Hexachlorobutadiene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Naphthalene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Pyridine	EPA-8270	U	0.20	1	MG/KG	08/23/2018	JMK
N-Nitrosodimethylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Phenol	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Aniline	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.28	1	MG/KG	08/23/2018	JMK
2-Chlorophenol	EPA-8270	U	0.29	1	MG/KG	08/23/2018	JMK
1,3-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
1,4-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzyl Alcohol	EPA-8270	U	0.15	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS JOB#: EV18080100
ALS SAMPLE#: EV18080100-06
CLIENT CONTACT: Eric Dubcak
DATE RECEIVED: 08/17/2018
CLIENT PROJECT: 81187331
COLLECTION DATE: 8/17/2018 2:30:00 PM
CLIENT SAMPLE ID: B1-2.5
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	0.37	1	MG/KG	08/23/2018	JMK
3&4-Methylphenol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine	EPA-8270	U	0.28	1	MG/KG	08/23/2018	JMK
Hexachloroethane	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Nitrobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Isophorone	EPA-8270	U	0.21	1	MG/KG	08/23/2018	JMK
2-Nitrophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dimethylphenol	EPA-8270	U	0.19	1	MG/KG	08/23/2018	JMK
Benzoic Acid	EPA-8270	U	2.1	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane	EPA-8270	U	0.36	1	MG/KG	08/23/2018	JMK
2,4-Dichlorophenol	EPA-8270	U	0.73	1	MG/KG	08/23/2018	JMK
1,2,4-Trichlorobenzene	EPA-8270	U	0.21	1	MG/KG	08/23/2018	JMK
Naphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chloroaniline	EPA-8270	U	1.7	1	MG/KG	08/23/2018	JMK
2,6-Dichlorophenol	EPA-8270	U	0.54	1	MG/KG	08/23/2018	JMK
Hexachlorobutadiene	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
4-Chloro-3-Methylphenol	EPA-8270	U	0.95	1	MG/KG	08/23/2018	JMK
2-Methylnaphthalene	EPA-8270	U	0.45	1	MG/KG	08/23/2018	JMK
1-Methylnaphthalene	EPA-8270	U	0.52	1	MG/KG	08/23/2018	JMK
Hexachlorocyclopentadiene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,6-Trichlorophenol	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
2,4,5-Trichlorophenol	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
2-Chloronaphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Nitroaniline	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dimethylphthalate	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
2,6-Dinitrotoluene	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Acenaphthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3-Nitroaniline	EPA-8270	U	1.7	1	MG/KG	08/23/2018	JMK
2,4-Dinitrophenol	EPA-8270	U	0.16	1	MG/KG	08/23/2018	JMK
4-Nitrophenol	EPA-8270	U	0.16	1	MG/KG	08/23/2018	JMK
Dibenzofuran	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol	EPA-8270	U	0.15	1	MG/KG	08/23/2018	JMK
Diethylphthalate	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Fluorene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chlorophenyl-Phenylether	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS JOB#: EV18080100
ALS SAMPLE#: EV18080100-06
CLIENT CONTACT: Eric Dubcak
DATE RECEIVED: 08/17/2018
CLIENT PROJECT: 81187331
COLLECTION DATE: 8/17/2018 2:30:00 PM
CLIENT SAMPLE ID: B1-2.5
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Nitroaniline	EPA-8270	U	0.37	1	MG/KG	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
N-Nitrosodiphenylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Azobenzene	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
4-Bromophenyl-Phenylether	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Hexachlorobenzene	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Pentachlorophenol	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
Phenanthrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Carbazole	EPA-8270	U	0.32	1	MG/KG	08/23/2018	JMK
Di-N-Butylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Butylbenzylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3,3-Dichlorobenzidine	EPA-8270	U	0.51	1	MG/KG	08/23/2018	JMK
Benzo[A]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Chrysene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Di-N-Octylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[B]Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[K]Fluoranthene	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Benzo[A]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1254	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
Mercury	EPA-7471	0.034	0.020	1	MG/KG	08/23/2018	RAL
Arsenic	EPA-6020	35	0.94	1	MG/KG	08/22/2018	RAL
Cadmium	EPA-6020	U	0.29	1	MG/KG	08/22/2018	RAL
Chromium	EPA-6020	67	0.48	1	MG/KG	08/22/2018	RAL
Lead	EPA-6020	57	0.30	1	MG/KG	08/22/2018	RAL

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
CLIENT CONTACT:	Eric Dubcak	ALS SAMPLE#:	EV18080100-06
CLIENT PROJECT:	81187331	DATE RECEIVED:	08/17/2018
CLIENT SAMPLE ID	B1-2.5	COLLECTION DATE:	8/17/2018 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
TFT	NWTPH-GX	52.5 SUR11	08/20/2018	JMK
C25	NWTPH-DX	75.7	08/22/2018	EBS
1,2-Dichloroethane-d4	EPA-8260	98.7	08/20/2018	DLC
1,2-Dichloroethane-d4	EPA-8260	96.1	08/21/2018	DLC
Toluene-d8	EPA-8260	109	08/20/2018	DLC
Toluene-d8	EPA-8260	104	08/21/2018	DLC
4-Bromofluorobenzene	EPA-8260	93.6	08/20/2018	DLC
4-Bromofluorobenzene	EPA-8260	84.7	08/21/2018	DLC
2-Fluorophenol	EPA-8270	105	08/23/2018	JMK
Phenol-d5	EPA-8270	103	08/23/2018	JMK
Nitrobenzene-d5	EPA-8270	88.0	08/23/2018	JMK
2-Fluorobiphenyl	EPA-8270	83.6	08/23/2018	JMK
2,4,6-Tribromophenol	EPA-8270	90.6	08/23/2018	JMK
Terphenyl-d14	EPA-8270	89.4	08/23/2018	JMK
TCMX	EPA-8082	103	08/20/2018	JMK
DCB	EPA-8082	84.8	08/20/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.

SUR11 -Surrogate recovery was below acceptance limits. Re-extraction and/or reanalysis confirm low recovery caused by matrix interferences.



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-07
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 12:55:00 PM
CLIENT SAMPLE ID	B5-2.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	3.5	3.0	1	MG/KG	08/20/2018	JMK
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	08/22/2018	EBS
TPH-Oil Range	NWTPH-DX	170	50	1	MG/KG	08/22/2018	EBS
Dichlorodifluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Vinyl Chloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Tetrachloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trichlorofluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Disulfide	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Acetone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Methylene Chloride	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Acrylonitrile	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Butanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Benzene	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Trichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Dibromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromodichloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Toluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Hexanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,3-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Tetrachloroethylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS JOB#: EV18080100
ALS SAMPLE#: EV18080100-07
CLIENT CONTACT: Eric Dubcak
DATE RECEIVED: 08/17/2018
CLIENT PROJECT: 81187331
COLLECTION DATE: 8/17/2018 12:55:00 PM
CLIENT SAMPLE ID: B5-2.5
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dibromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromoethane	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Chlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Ethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
m,p-Xylene	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Styrene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
o-Xylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromoform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Isopropylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Propyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
T-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	0.013	0.010	1	MG/KG	08/20/2018	DLC
S-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
P-Isopropyltoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Butylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Hexachlorobutadiene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Naphthalene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Pyridine	EPA-8270	U	0.20	1	MG/KG	08/23/2018	JMK
N-Nitrosodimethylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Phenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Aniline	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
2-Chlorophenol	EPA-8270	U	0.26	1	MG/KG	08/23/2018	JMK
1,3-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
1,4-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzyl Alcohol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-07
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 12:55:00 PM
CLIENT SAMPLE ID	B5-2.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	0.33	1	MG/KG	08/23/2018	JMK
3&4-Methylphenol	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
Hexachloroethane	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Nitrobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Isophorone	EPA-8270	U	0.18	1	MG/KG	08/23/2018	JMK
2-Nitrophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dimethylphenol	EPA-8270	U	0.17	1	MG/KG	08/23/2018	JMK
Benzoic Acid	EPA-8270	U	1.9	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane	EPA-8270	U	0.32	1	MG/KG	08/23/2018	JMK
2,4-Dichlorophenol	EPA-8270	U	0.64	1	MG/KG	08/23/2018	JMK
1,2,4-Trichlorobenzene	EPA-8270	U	0.19	1	MG/KG	08/23/2018	JMK
Naphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chloroaniline	EPA-8270	U	1.5	1	MG/KG	08/23/2018	JMK
2,6-Dichlorophenol	EPA-8270	U	0.48	1	MG/KG	08/23/2018	JMK
Hexachlorobutadiene	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
4-Chloro-3-Methylphenol	EPA-8270	U	0.85	1	MG/KG	08/23/2018	JMK
2-Methylnaphthalene	EPA-8270	U	0.40	1	MG/KG	08/23/2018	JMK
1-Methylnaphthalene	EPA-8270	U	0.46	1	MG/KG	08/23/2018	JMK
Hexachlorocyclopentadiene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,6-Trichlorophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,5-Trichlorophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Chloronaphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Nitroaniline	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dimethylphthalate	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
2,6-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3-Nitroaniline	EPA-8270	U	1.5	1	MG/KG	08/23/2018	JMK
2,4-Dinitrophenol	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
4-Nitrophenol	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
Dibenzofuran	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
Diethylphthalate	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Fluorene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chlorophenyl-Phenylether	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-07
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 12:55:00 PM
CLIENT SAMPLE ID	B5-2.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Nitroaniline	EPA-8270	U	0.33	1	MG/KG	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
N-Nitrosodiphenylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Azobenzene	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
4-Bromophenyl-Phenylether	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Hexachlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pentachlorophenol	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
Phenanthrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Carbazole	EPA-8270	U	0.28	1	MG/KG	08/23/2018	JMK
Di-N-Butylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Butylbenzylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3,3-Dichlorobenzidine	EPA-8270	U	0.45	1	MG/KG	08/23/2018	JMK
Benzo[A]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Chrysene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Di-N-Octylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[B]Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[K]Fluoranthene	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Benzo[A]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	75.6	08/20/2018	JMK
C25	NWTPH-DX	83.6	08/22/2018	EBS
1,2-Dichloroethane-d4	EPA-8260	98.4	08/20/2018	DLC
Toluene-d8	EPA-8260	109	08/20/2018	DLC
4-Bromofluorobenzene	EPA-8260	105	08/20/2018	DLC
2-Fluorophenol	EPA-8270	96.7	08/23/2018	JMK
Phenol-d5	EPA-8270	93.0	08/23/2018	JMK
Nitrobenzene-d5	EPA-8270	81.1	08/23/2018	JMK
2-Fluorobiphenyl	EPA-8270	76.1	08/23/2018	JMK
2,4,6-Tribromophenol	EPA-8270	85.5	08/23/2018	JMK
Terphenyl-d14	EPA-8270	81.3	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-07
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 12:55:00 PM
CLIENT SAMPLE ID	B5-2.5	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 gasoline range product and lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-08
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 1:05:00 PM
CLIENT SAMPLE ID	B5-18	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/20/2018	JMK
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	08/24/2018	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	08/24/2018	EBS
Dichlorodifluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Vinyl Chloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Tetrachloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trichlorofluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Disulfide	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Acetone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Methylene Chloride	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Acrylonitrile	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Butanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Benzene	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Trichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Dibromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromodichloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Toluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Hexanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,3-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Tetrachloroethylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-08
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 1:05:00 PM
CLIENT SAMPLE ID	B5-18	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dibromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromoethane	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Chlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Ethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
m,p-Xylene	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Styrene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
o-Xylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromoform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Isopropylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Propyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
T-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
S-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
P-Isopropyltoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Butylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Hexachlorobutadiene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Naphthalene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Pyridine	EPA-8270	U	0.20	1	MG/KG	08/23/2018	JMK
N-Nitrosodimethylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Phenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Aniline	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
2-Chlorophenol	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
1,3-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
1,4-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzyl Alcohol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-08
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 1:05:00 PM
CLIENT SAMPLE ID	B5-18	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	0.32	1	MG/KG	08/23/2018	JMK
3&4-Methylphenol	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine	EPA-8270	U	0.25	1	MG/KG	08/23/2018	JMK
Hexachloroethane	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Nitrobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Isophorone	EPA-8270	U	0.18	1	MG/KG	08/23/2018	JMK
2-Nitrophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dimethylphenol	EPA-8270	U	0.16	1	MG/KG	08/23/2018	JMK
Benzoic Acid	EPA-8270	U	1.8	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane	EPA-8270	U	0.31	1	MG/KG	08/23/2018	JMK
2,4-Dichlorophenol	EPA-8270	U	0.63	1	MG/KG	08/23/2018	JMK
1,2,4-Trichlorobenzene	EPA-8270	U	0.18	1	MG/KG	08/23/2018	JMK
Naphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chloroaniline	EPA-8270	U	1.5	1	MG/KG	08/23/2018	JMK
2,6-Dichlorophenol	EPA-8270	U	0.47	1	MG/KG	08/23/2018	JMK
Hexachlorobutadiene	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
4-Chloro-3-Methylphenol	EPA-8270	U	0.83	1	MG/KG	08/23/2018	JMK
2-Methylnaphthalene	EPA-8270	U	0.39	1	MG/KG	08/23/2018	JMK
1-Methylnaphthalene	EPA-8270	U	0.45	1	MG/KG	08/23/2018	JMK
Hexachlorocyclopentadiene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,6-Trichlorophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,5-Trichlorophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Chloronaphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Nitroaniline	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dimethylphthalate	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
2,6-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3-Nitroaniline	EPA-8270	U	1.5	1	MG/KG	08/23/2018	JMK
2,4-Dinitrophenol	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
4-Nitrophenol	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
Dibenzofuran	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
Diethylphthalate	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Fluorene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chlorophenyl-Phenylether	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-08
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 1:05:00 PM
CLIENT SAMPLE ID	B5-18	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Nitroaniline	EPA-8270	U	0.33	1	MG/KG	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
N-Nitrosodiphenylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Azobenzene	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
4-Bromophenyl-Phenylether	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Hexachlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pentachlorophenol	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
Phenanthrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Carbazole	EPA-8270	U	0.28	1	MG/KG	08/23/2018	JMK
Di-N-Butylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Butylbenzylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3,3-Dichlorobenzidine	EPA-8270	U	0.44	1	MG/KG	08/23/2018	JMK
Benzo[A]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Chrysene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Di-N-Octylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[B]Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[K]Fluoranthene	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Benzo[A]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	75.9	08/20/2018	JMK
C25	NWTPH-DX	84.4	08/24/2018	EBS
1,2-Dichloroethane-d4	EPA-8260	100	08/20/2018	DLC
Toluene-d8	EPA-8260	106	08/20/2018	DLC
4-Bromofluorobenzene	EPA-8260	93.4	08/20/2018	DLC
2-Fluorophenol	EPA-8270	95.7	08/23/2018	JMK
Phenol-d5	EPA-8270	94.1	08/23/2018	JMK
Nitrobenzene-d5	EPA-8270	81.7	08/23/2018	JMK
2-Fluorobiphenyl	EPA-8270	80.0	08/23/2018	JMK
2,4,6-Tribromophenol	EPA-8270	89.1	08/23/2018	JMK
Terphenyl-d14	EPA-8270	94.5	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-08
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 1:05:00 PM
CLIENT SAMPLE ID	B5-18	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS JOB#: EV18080100
ALS SAMPLE#: EV18080100-09
CLIENT CONTACT: Eric Dubcak
DATE RECEIVED: 08/17/2018
CLIENT PROJECT: 81187331
COLLECTION DATE: 8/17/2018 1:45:00 PM
CLIENT SAMPLE ID: B2-3
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/20/2018	JMK
TPH-Diesel Range	NWTPH-DX	U	29	1	MG/KG	08/24/2018	EBS
TPH-Oil Range	NWTPH-DX	U	58	1	MG/KG	08/24/2018	EBS
Dichlorodifluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Vinyl Chloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Tetrachloride	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trichlorofluoromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Carbon Disulfide	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Acetone	EPA-8260	0.38	0.22	1	MG/KG	08/21/2018	DLC
1,1-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Methylene Chloride	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Acrylonitrile	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Butanone	EPA-8260	U	0.17	1	MG/KG	08/21/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Chloroform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Benzene	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Trichloroethene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Dibromomethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromodichloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
Toluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Hexanone	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,3-Dichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Tetrachloroethylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-09
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 1:45:00 PM
CLIENT SAMPLE ID	B2-3	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dibromochloromethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromoethane	EPA-8260	U	0.0050	1	MG/KG	08/20/2018	DLC
Chlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Ethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
m,p-Xylene	EPA-8260	U	0.020	1	MG/KG	08/20/2018	DLC
Styrene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
o-Xylene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromoform	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Isopropylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Bromobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Propyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
2-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
4-Chlorotoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
T-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
S-Butyl Benzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
P-Isopropyltoluene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
N-Butylbenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	0.050	1	MG/KG	08/20/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Hexachlorobutadiene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Naphthalene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	0.010	1	MG/KG	08/20/2018	DLC
Pyridine	EPA-8270	U	0.20	1	MG/KG	08/23/2018	JMK
N-Nitrosodimethylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Phenol	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
Aniline	EPA-8270	U	0.14	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethyl)Ether	EPA-8270	U	0.29	1	MG/KG	08/23/2018	JMK
2-Chlorophenol	EPA-8270	U	0.30	1	MG/KG	08/23/2018	JMK
1,3-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
1,4-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzyl Alcohol	EPA-8270	U	0.15	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS JOB#: EV18080100
ALS SAMPLE#: EV18080100-09
CLIENT CONTACT: Eric Dubcak
DATE RECEIVED: 08/17/2018
CLIENT PROJECT: 81187331
COLLECTION DATE: 8/17/2018 1:45:00 PM
CLIENT SAMPLE ID: B2-3
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	0.38	1	MG/KG	08/23/2018	JMK
3&4-Methylphenol	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine	EPA-8270	U	0.28	1	MG/KG	08/23/2018	JMK
Hexachloroethane	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Nitrobenzene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Isophorone	EPA-8270	U	0.21	1	MG/KG	08/23/2018	JMK
2-Nitrophenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dimethylphenol	EPA-8270	U	0.19	1	MG/KG	08/23/2018	JMK
Benzoic Acid	EPA-8270	U	2.2	1	MG/KG	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane	EPA-8270	U	0.37	1	MG/KG	08/23/2018	JMK
2,4-Dichlorophenol	EPA-8270	U	0.74	1	MG/KG	08/23/2018	JMK
1,2,4-Trichlorobenzene	EPA-8270	U	0.21	1	MG/KG	08/23/2018	JMK
Naphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
4-Chloroaniline	EPA-8270	U	1.7	1	MG/KG	08/23/2018	JMK
2,6-Dichlorophenol	EPA-8270	U	0.55	1	MG/KG	08/23/2018	JMK
Hexachlorobutadiene	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
4-Chloro-3-Methylphenol	EPA-8270	U	0.98	1	MG/KG	08/23/2018	JMK
2-Methylnaphthalene	EPA-8270	U	0.46	1	MG/KG	08/23/2018	JMK
1-Methylnaphthalene	EPA-8270	U	0.54	1	MG/KG	08/23/2018	JMK
Hexachlorocyclopentadiene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4,6-Trichlorophenol	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
2,4,5-Trichlorophenol	EPA-8270	U	0.12	1	MG/KG	08/23/2018	JMK
2-Chloronaphthalene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2-Nitroaniline	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Acenaphthylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dimethylphthalate	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
2,6-Dinitrotoluene	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Acenaphthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3-Nitroaniline	EPA-8270	U	1.8	1	MG/KG	08/23/2018	JMK
2,4-Dinitrophenol	EPA-8270	U	0.16	1	MG/KG	08/23/2018	JMK
4-Nitrophenol	EPA-8270	U	0.16	1	MG/KG	08/23/2018	JMK
Dibenzofuran	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,4-Dinitrotoluene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol	EPA-8270	U	0.15	1	MG/KG	08/23/2018	JMK
Diethylphthalate	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
Fluorene	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
4-Chlorophenyl-Phenylether	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-09
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 1:45:00 PM
CLIENT SAMPLE ID	B2-3	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Nitroaniline	EPA-8270	U	0.38	1	MG/KG	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
N-Nitrosodiphenylamine	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Azobenzene	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
4-Bromophenyl-Phenylether	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Hexachlorobenzene	EPA-8270	U	0.11	1	MG/KG	08/23/2018	JMK
Pentachlorophenol	EPA-8270	U	0.50	1	MG/KG	08/23/2018	JMK
Phenanthrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Carbazole	EPA-8270	U	0.32	1	MG/KG	08/23/2018	JMK
Di-N-Butylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Butylbenzylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
3,3-Dichlorobenzidine	EPA-8270	U	0.52	1	MG/KG	08/23/2018	JMK
Benzo[A]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Chrysene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Di-N-Octylphthalate	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[B]Fluoranthene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[K]Fluoranthene	EPA-8270	U	0.13	1	MG/KG	08/23/2018	JMK
Benzo[A]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270	U	0.10	1	MG/KG	08/23/2018	JMK
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1254	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/20/2018	JMK
Chromium (VI)	EPA-7196	U	5.0	1	MG/KG	09/14/2018	JMK
Mercury	EPA-7471	0.090	0.020	1	MG/KG	08/23/2018	RAL
Arsenic	EPA-6020	41	0.97	1	MG/KG	08/22/2018	RAL
Cadmium	EPA-6020	U	0.30	1	MG/KG	08/22/2018	RAL
Chromium	EPA-6020	70	0.49	1	MG/KG	08/22/2018	RAL
Lead	EPA-6020	31	0.31	1	MG/KG	08/22/2018	RAL

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-09
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 1:45:00 PM
CLIENT SAMPLE ID	B2-3	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
TFT	NWTPH-GX	63.4	08/20/2018	JMK
C25	NWTPH-DX	73.1	08/24/2018	EBS
1,2-Dichloroethane-d4	EPA-8260	99.2	08/20/2018	DLC
1,2-Dichloroethane-d4	EPA-8260	95.4	08/21/2018	DLC
Toluene-d8	EPA-8260	111	08/20/2018	DLC
Toluene-d8	EPA-8260	102	08/21/2018	DLC
4-Bromofluorobenzene	EPA-8260	97.1	08/20/2018	DLC
4-Bromofluorobenzene	EPA-8260	84.6	08/21/2018	DLC
2-Fluorophenol	EPA-8270	104	08/23/2018	JMK
Phenol-d5	EPA-8270	102	08/23/2018	JMK
Nitrobenzene-d5	EPA-8270	87.8	08/23/2018	JMK
2-Fluorobiphenyl	EPA-8270	82.6	08/23/2018	JMK
2,4,6-Tribromophenol	EPA-8270	91.9	08/23/2018	JMK
Terphenyl-d14	EPA-8270	89.1	08/23/2018	JMK
TCMX	EPA-8082	99.4	08/20/2018	JMK
DCB	EPA-8082	92.2	08/20/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-10
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 2:10:00 PM
CLIENT SAMPLE ID	B2	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	260	50	1	UG/L	08/20/2018	DLC
TPH-Diesel Range	NWTPH-DX	450	130	1	UG/L	08/21/2018	EBS
TPH-Oil Range	NWTPH-DX	400	250	1	UG/L	08/21/2018	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	08/20/2018	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Acetone	EPA-8260	U	25	1	UG/L	08/20/2018	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	08/20/2018	DLC
Acrylonitrile	EPA-8260	U	10	1	UG/L	08/20/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
2-Butanone	EPA-8260	U	10	1	UG/L	08/20/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Benzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	08/20/2018	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
2-Hexanone	EPA-8260	U	10	1	UG/L	08/20/2018	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-10
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 2:10:00 PM
CLIENT SAMPLE ID	B2	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	08/20/2018	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	08/20/2018	DLC
Styrene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	08/20/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Naphthalene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	08/20/2018	DLC
Pyridine	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
N-Nitrosodimethylamine	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Phenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Aniline	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Bis(2-Chloroethyl)Ether	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2-Chlorophenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
1,3-Dichlorobenzene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
1,4-Dichlorobenzene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Benzyl Alcohol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-10
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 2:10:00 PM
CLIENT SAMPLE ID	B2	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2-Methylphenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
3&4-Methylphenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Hexachloroethane	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Nitrobenzene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Isophorone	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2-Nitrophenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2,4-Dimethylphenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Benzoic Acid	EPA-8270	U	10	1	UG/L	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2,4-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
1,2,4-Trichlorobenzene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Naphthalene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
4-Chloroaniline	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2,6-Dichlorophenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Hexachlorobutadiene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
4-Chloro-3-Methylphenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2-Methylnaphthalene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
1-Methylnaphthalene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Hexachlorocyclopentadiene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2,4,6-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2,4,5-Trichlorophenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2-Chloronaphthalene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2-Nitroaniline	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Acenaphthylene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Dimethylphthalate	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2,6-Dinitrotoluene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Acenaphthene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
3-Nitroaniline	EPA-8270	U	5.0	1	UG/L	08/23/2018	JMK
2,4-Dinitrophenol	EPA-8270	U	10	1	UG/L	08/23/2018	JMK
4-Nitrophenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Dibenzofuran	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2,4-Dinitrotoluene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Diethylphthalate	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Fluorene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
4-Chlorophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon	DATE:	9/14/2018
	21905 - 64th Ave W, Suite 100	ALS JOB#:	EV18080100
	Mountlake Terrace, WA 98043	ALS SAMPLE#:	EV18080100-10
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 2:10:00 PM
CLIENT SAMPLE ID	B2	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
4-Nitroaniline	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
N-Nitrosodiphenylamine	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Azobenzene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
4-Bromophenyl-Phenylether	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Hexachlorobenzene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Pentachlorophenol	EPA-8270	U	5.0	1	UG/L	08/23/2018	JMK
Phenanthrene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Anthracene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Carbazole	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Di-N-Butylphthalate	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Fluoranthene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Pyrene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Butylbenzylphthalate	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
3,3-Dichlorobenzidine	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Benzo[A]Anthracene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Chrysene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Di-N-Octylphthalate	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Benzo[B]Fluoranthene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Benzo[K]Fluoranthene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Benzo[A]Pyrene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270	U	2.0	1	UG/L	08/23/2018	JMK
PCB-1016	EPA-8082	U	0.10	1	UG/L	08/22/2018	PAB
PCB-1221	EPA-8082	U	0.10	1	UG/L	08/22/2018	PAB
PCB-1232	EPA-8082	U	0.10	1	UG/L	08/22/2018	PAB
PCB-1242	EPA-8082	U	0.10	1	UG/L	08/22/2018	PAB
PCB-1248	EPA-8082	U	0.10	1	UG/L	08/22/2018	PAB
PCB-1254	EPA-8082	U	0.10	1	UG/L	08/22/2018	PAB
PCB-1260	EPA-8082	U	0.10	1	UG/L	08/22/2018	PAB
PCB-1268	EPA-8082	U	0.10	1	UG/L	08/22/2018	PAB
Mercury	EPA-245.1	U	0.20	1	UG/L	08/23/2018	RAL
Arsenic	EPA-200.8	77	1.0	1	UG/L	08/22/2018	RAL
Cadmium	EPA-200.8	U	1.0	1	UG/L	08/22/2018	RAL
Chromium	EPA-200.8	9.2	2.0	1	UG/L	08/22/2018	RAL
Lead	EPA-200.8	U	1.0	1	UG/L	08/22/2018	RAL

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS JOB#:	EV18080100
		ALS SAMPLE#:	EV18080100-10
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	08/17/2018
CLIENT PROJECT:	81187331	COLLECTION DATE:	8/17/2018 2:10:00 PM
CLIENT SAMPLE ID	B2	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
TFT	NWTPH-GX	92.7	08/20/2018	DLC
C25	NWTPH-DX	85.4	08/21/2018	EBS
1,2-Dichloroethane-d4	EPA-8260	95.5	08/20/2018	DLC
Toluene-d8	EPA-8260	104	08/20/2018	DLC
4-Bromofluorobenzene	EPA-8260	95.5	08/20/2018	DLC
2-Fluorophenol	EPA-8270	53.7	08/23/2018	JMK
Phenol-d5	EPA-8270	33.0	08/23/2018	JMK
Nitrobenzene-d5	EPA-8270	106	08/23/2018	JMK
2-Fluorobiphenyl	EPA-8270	81.9	08/23/2018	JMK
2,4,6-Tribromophenol	EPA-8270	111	08/23/2018	JMK
Terphenyl-d14	EPA-8270	94.5	08/23/2018	JMK
TCMX	EPA-8082	60.1	08/22/2018	PAB
DCB	EPA-8082	31.6	08/22/2018	PAB

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, an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS SDG#: EV18080100
WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Dubcak
CLIENT PROJECT: 81187331

LABORATORY BLANK RESULTS

MBG-082018S - Batch 131764 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	MG/KG	3.0	08/20/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.

MBG-082018W2 - Batch 131717 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	UG/L	50	08/20/2018	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-082218S - Batch 131767 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	MG/KG	25	08/22/2018	EBS
TPH-Oil Range	NWTPH-DX	U	MG/KG	50	08/22/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-082018W - Batch 131807 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	130	08/21/2018	EBS
TPH-Oil Range	NWTPH-DX	U	UG/L	250	08/21/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-082018S - Batch 131743 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Chloromethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Vinyl Chloride	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Bromomethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Chloroethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Carbon Tetrachloride	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Trichlorofluoromethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Carbon Disulfide	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Acetone	EPA-8260	U	MG/KG	0.050	08/20/2018	DLC
1,1-Dichloroethene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Methylene Chloride	EPA-8260	U	MG/KG	0.020	08/20/2018	DLC
Acrylonitrile	EPA-8260	U	MG/KG	0.050	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY BLANK RESULTS

MB-082018S - Batch 131743 - Soil by EPA-8260

Methyl T-Butyl Ether	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,1-Dichloroethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
2-Butanone	EPA-8260	U	MG/KG	0.050	08/20/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
2,2-Dichloropropane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Bromochloromethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Chloroform	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,1-Dichloropropene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,2-Dichloroethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Benzene	EPA-8260	U	MG/KG	0.0050	08/20/2018	DLC
Trichloroethene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,2-Dichloropropane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Dibromomethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Bromodichloromethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	MG/KG	0.050	08/20/2018	DLC
Toluene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
2-Hexanone	EPA-8260	U	MG/KG	0.050	08/20/2018	DLC
1,3-Dichloropropane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Tetrachloroethylene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Dibromochloromethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,2-Dibromoethane	EPA-8260	U	MG/KG	0.0050	08/20/2018	DLC
Chlorobenzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Ethylbenzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
m,p-Xylene	EPA-8260	U	MG/KG	0.020	08/20/2018	DLC
Styrene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
o-Xylene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Bromoform	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Isopropylbenzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Bromobenzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
N-Propyl Benzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
2-Chlorotoluene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
4-Chlorotoluene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY BLANK RESULTS

MB-082018S - Batch 131743 - Soil by EPA-8260

T-Butyl Benzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
S-Butyl Benzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
P-Isopropyltoluene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
N-Butylbenzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	MG/KG	0.050	08/20/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Hexachlorobutadiene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
Naphthalene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	MG/KG	0.010	08/20/2018	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-082018W - Batch 131691 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Chloromethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Vinyl Chloride	EPA-8260	U	UG/L	0.20	08/20/2018	DLC
Bromomethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Chloroethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Carbon Tetrachloride	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Trichlorofluoromethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Carbon Disulfide	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Acetone	EPA-8260	U	UG/L	25	08/20/2018	DLC
1,1-Dichloroethene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Methylene Chloride	EPA-8260	U	UG/L	5.0	08/20/2018	DLC
Acrylonitrile	EPA-8260	U	UG/L	10	08/20/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,1-Dichloroethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
2-Butanone	EPA-8260	U	UG/L	10	08/20/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
2,2-Dichloropropane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Bromochloromethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Chloroform	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,1-Dichloropropene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,2-Dichloroethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC

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CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043

DATE: 9/14/2018
ALS SDG#: EV18080100
WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Dubcak
CLIENT PROJECT: 81187331

LABORATORY BLANK RESULTS

MB-082018W - Batch 131691 - Water by EPA-8260

Benzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Trichloroethene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,2-Dichloropropane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Dibromomethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Bromodichloromethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	UG/L	10	08/20/2018	DLC
Toluene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
2-Hexanone	EPA-8260	U	UG/L	10	08/20/2018	DLC
1,3-Dichloropropane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Tetrachloroethylene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Dibromochloromethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,2-Dibromoethane	EPA-8260	U	UG/L	0.010	08/20/2018	DLC
Chlorobenzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Ethylbenzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
m,p-Xylene	EPA-8260	U	UG/L	4.0	08/20/2018	DLC
Styrene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
o-Xylene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Bromoform	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Isopropylbenzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Bromobenzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
N-Propyl Benzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
2-Chlorotoluene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
4-Chlorotoluene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
T-Butyl Benzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
S-Butyl Benzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
P-Isopropyltoluene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
N-Butylbenzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/L	10	08/20/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
Hexachlorobutadiene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY BLANK RESULTS

MB-082018W - Batch 131691 - Water by EPA-8260

Naphthalene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/L	2.0	08/20/2018	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-082118S - Batch 131827 - Soil by EPA-8270

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	MG/KG	0.20	08/23/2018	JMK
N-Nitrosodimethylamine	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Phenol	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Aniline	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Bis(2-Chloroethyl)Ether	EPA-8270	U	MG/KG	0.25	08/23/2018	JMK
2-Chlorophenol	EPA-8270	U	MG/KG	0.25	08/23/2018	JMK
1,3-Dichlorobenzene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
1,4-Dichlorobenzene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Benzyl Alcohol	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
1,2-Dichlorobenzene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
2-Methylphenol	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	MG/KG	0.25	08/23/2018	JMK
3&4-Methylphenol	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine	EPA-8270	U	MG/KG	0.25	08/23/2018	JMK
Hexachloroethane	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Nitrobenzene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Isophorone	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
2-Nitrophenol	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
2,4-Dimethylphenol	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Benzoic Acid	EPA-8270	U	MG/KG	1.0	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane	EPA-8270	U	MG/KG	0.25	08/23/2018	JMK
2,4-Dichlorophenol	EPA-8270	U	MG/KG	0.50	08/23/2018	JMK
1,2,4-Trichlorobenzene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Naphthalene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
4-Chloroaniline	EPA-8270	U	MG/KG	1.0	08/23/2018	JMK
2,6-Dichlorophenol	EPA-8270	U	MG/KG	0.25	08/23/2018	JMK
Hexachlorobutadiene	EPA-8270	U	MG/KG	0.50	08/23/2018	JMK
4-Chloro-3-Methylphenol	EPA-8270	U	MG/KG	0.50	08/23/2018	JMK
2-Methylnaphthalene	EPA-8270	U	MG/KG	0.25	08/23/2018	JMK
1-Methylnaphthalene	EPA-8270	U	MG/KG	0.25	08/23/2018	JMK
Hexachlorocyclopentadiene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
2,4,6-Trichlorophenol	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
2,4,5-Trichlorophenol	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
2-Chloronaphthalene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043

CLIENT CONTACT: Eric Dubcak
CLIENT PROJECT: 81187331

DATE: 9/14/2018
ALS SDG#: EV18080100
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-082118S - Batch 131827 - Soil by EPA-8270

2-Nitroaniline	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Acenaphthylene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Dimethylphthalate	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
2,6-Dinitrotoluene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Acenaphthene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
3-Nitroaniline	EPA-8270	U	MG/KG	1.0	08/23/2018	JMK
2,4-Dinitrophenol	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
4-Nitrophenol	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Dibenzofuran	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
2,4-Dinitrotoluene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Diethylphthalate	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Fluorene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
4-Chlorophenyl-Phenylether	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
4-Nitroaniline	EPA-8270	U	MG/KG	0.25	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
N-Nitrosodiphenylamine	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Azobenzene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
4-Bromophenyl-Phenylether	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Hexachlorobenzene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Pentachlorophenol	EPA-8270	U	MG/KG	0.50	08/23/2018	JMK
Phenanthrene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Anthracene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Carbazole	EPA-8270	U	MG/KG	0.25	08/23/2018	JMK
Di-N-Butylphthalate	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Fluoranthene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Pyrene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Butylbenzylphthalate	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
3,3-Dichlorobenzidine	EPA-8270	U	MG/KG	0.25	08/23/2018	JMK
Benzo[A]Anthracene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Chrysene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Di-N-Octylphthalate	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Benzo[B]Fluoranthene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Benzo[K]Fluoranthene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Benzo[A]Pyrene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270	U	MG/KG	0.10	08/23/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY BLANK RESULTS

MB-082318W - Batch 131851 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
N-Nitrosodimethylamine	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Phenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Aniline	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Bis(2-Chloroethyl)Ether	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2-Chlorophenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
1,3-Dichlorobenzene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
1,4-Dichlorobenzene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Benzyl Alcohol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
1,2-Dichlorobenzene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2-Methylphenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
3&4-Methylphenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Hexachloroethane	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Nitrobenzene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Isophorone	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2-Nitrophenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2,4-Dimethylphenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Benzoic Acid	EPA-8270	U	UG/L	10	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2,4-Dichlorophenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
1,2,4-Trichlorobenzene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Naphthalene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
4-Chloroaniline	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2,6-Dichlorophenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Hexachlorobutadiene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
4-Chloro-3-Methylphenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2-Methylnaphthalene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
1-Methylnaphthalene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Hexachlorocyclopentadiene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2,4,6-Trichlorophenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2,4,5-Trichlorophenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2-Chloronaphthalene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2-Nitroaniline	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Acenaphthylene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Dimethylphthalate	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2,6-Dinitrotoluene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Acenaphthene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK

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CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY BLANK RESULTS

MB-082318W - Batch 131851 - Water by EPA-8270

3-Nitroaniline	EPA-8270	U	UG/L	5.0	08/23/2018	JMK
2,4-Dinitrophenol	EPA-8270	U	UG/L	10	08/23/2018	JMK
4-Nitrophenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Dibenzofuran	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2,4-Dinitrotoluene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Diethylphthalate	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Fluorene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
4-Chlorophenyl-Phenylether	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
4-Nitroaniline	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
N-Nitrosodiphenylamine	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Azobenzene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
4-Bromophenyl-Phenylether	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Hexachlorobenzene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Pentachlorophenol	EPA-8270	U	UG/L	5.0	08/23/2018	JMK
Phenanthrene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Anthracene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Carbazole	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Di-N-Butylphthalate	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Fluoranthene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Pyrene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Butylbenzylphthalate	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
3,3-Dichlorobenzidine	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Benzo[A]Anthracene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Chrysene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Di-N-Octylphthalate	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Benzo[B]Fluoranthene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Benzo[K]Fluoranthene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Benzo[A]Pyrene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270	U	UG/L	2.0	08/23/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.

MB-082018S - Batch 131842 - Soil by EPA-8082

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	MG/KG	0.10	08/20/2018	JMK
PCB-1221	EPA-8082	U	MG/KG	0.10	08/20/2018	JMK

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CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS SDG#: EV18080100
WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Dubcak
CLIENT PROJECT: 81187331

LABORATORY BLANK RESULTS

MB-082018S - Batch 131842 - Soil by EPA-8082

PCB-1232	EPA-8082	U	MG/KG	0.10	08/20/2018	JMK
PCB-1242	EPA-8082	U	MG/KG	0.10	08/20/2018	JMK
PCB-1248	EPA-8082	U	MG/KG	0.10	08/20/2018	JMK
PCB-1254	EPA-8082	U	MG/KG	0.10	08/20/2018	JMK
PCB-1260	EPA-8082	U	MG/KG	0.10	08/20/2018	JMK
PCB-1268	EPA-8082	U	MG/KG	0.10	08/20/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.

MB-082018W - Batch 131799 - Water by EPA-8082

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	UG/L	0.10	08/22/2018	PAB
PCB-1221	EPA-8082	U	UG/L	0.10	08/22/2018	PAB
PCB-1232	EPA-8082	U	UG/L	0.10	08/22/2018	PAB
PCB-1242	EPA-8082	U	UG/L	0.10	08/22/2018	PAB
PCB-1248	EPA-8082	U	UG/L	0.10	08/22/2018	PAB
PCB-1254	EPA-8082	U	UG/L	0.10	08/22/2018	PAB
PCB-1260	EPA-8082	U	UG/L	0.10	08/22/2018	PAB
PCB-1268	EPA-8082	U	UG/L	0.10	08/22/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R323419 - Batch R323419 - Soil by EPA-7196

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Chromium (VI)	EPA-7196	U	MG/KG	5.0	09/14/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R322340 - Batch R322340 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	MG/KG	0.020	08/23/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R322339 - Batch R322339 - Water by EPA-245.1

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-245.1	U	UG/L	0.20	08/23/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

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DATE: 9/14/2018
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CLIENT CONTACT: Eric Dubcak
CLIENT PROJECT: 81187331

LABORATORY BLANK RESULTS

MB-082118S - Batch 131751 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	MG/KG	0.20	08/22/2018	RAL
Cadmium	EPA-6020	U	MG/KG	0.10	08/22/2018	RAL
Chromium	EPA-6020	U	MG/KG	0.10	08/22/2018	RAL
Lead	EPA-6020	U	MG/KG	0.10	08/22/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-082118W - Batch 131752 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	UG/L	1.0	08/22/2018	RAL
Cadmium	EPA-200.8	U	UG/L	1.0	08/22/2018	RAL
Chromium	EPA-200.8	U	UG/L	2.0	08/22/2018	RAL
Lead	EPA-200.8	U	UG/L	1.0	08/22/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



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CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 131764 - Soil by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Volatile Range - BS	NWTPH-GX	100			66.5	122.7	08/20/2018	JMK
TPH-Volatile Range - BSD	NWTPH-GX	97.7	3		66.5	122.7	08/20/2018	JMK

ALS Test Batch ID: 131717 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Volatile Range - BS	NWTPH-GX	90.2			66.5	122.7	08/20/2018	DLC
TPH-Volatile Range - BSD	NWTPH-GX	103	13		66.5	122.7	08/20/2018	DLC

ALS Test Batch ID: 131767 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	96.1			75.5	122.1	08/22/2018	EBS
TPH-Diesel Range - BSD	NWTPH-DX	95.0	1		75.5	122.1	08/22/2018	EBS

ALS Test Batch ID: 131807 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	85.9			67	125.2	08/21/2018	EBS
TPH-Diesel Range - BSD	NWTPH-DX	81.8	5		67	125.2	08/21/2018	EBS

ALS Test Batch ID: 131743 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Dichlorodifluoromethane - BS	EPA-8260	100			50	150	08/20/2018	DLC
Dichlorodifluoromethane - BSD	EPA-8260	98.6	2		50	150	08/20/2018	DLC
Chloromethane - BS	EPA-8260	103			50	150	08/20/2018	DLC
Chloromethane - BSD	EPA-8260	100	3		50	150	08/20/2018	DLC
Vinyl Chloride - BS	EPA-8260	92.4			50	150	08/20/2018	DLC
Vinyl Chloride - BSD	EPA-8260	90.9	2		50	150	08/20/2018	DLC
Bromomethane - BS	EPA-8260	107			50	150	08/20/2018	DLC
Bromomethane - BSD	EPA-8260	102	5		50	150	08/20/2018	DLC
Chloroethane - BS	EPA-8260	104			50	150	08/20/2018	DLC
Chloroethane - BSD	EPA-8260	104	0		50	150	08/20/2018	DLC
Carbon Tetrachloride - BS	EPA-8260	112			50	150	08/20/2018	DLC
Carbon Tetrachloride - BSD	EPA-8260	111	1		50	150	08/20/2018	DLC
Trichlorofluoromethane - BS	EPA-8260	108			50	150	08/20/2018	DLC
Trichlorofluoromethane - BSD	EPA-8260	107	2		50	150	08/20/2018	DLC
Carbon Disulfide - BS	EPA-8260	111			50	150	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043

DATE: 9/14/2018
ALS SDG#: EV18080100
WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Dubcak
CLIENT PROJECT: 81187331

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Carbon Disulfide - BSD	EPA-8260	108	3		50	150	08/20/2018	DLC
Acetone - BS	EPA-8260	85.6			50	150	08/20/2018	DLC
Acetone - BSD	EPA-8260	83.4	3		50	150	08/20/2018	DLC
1,1-Dichloroethene - BS	EPA-8260	99.0			73	138	08/20/2018	DLC
1,1-Dichloroethene - BSD	EPA-8260	97.3	2		73	138	08/20/2018	DLC
Methylene Chloride - BS	EPA-8260	111			50	150	08/20/2018	DLC
Methylene Chloride - BSD	EPA-8260	114	3		50	150	08/20/2018	DLC
Acrylonitrile - BS	EPA-8260	97.3			50	150	08/20/2018	DLC
Acrylonitrile - BSD	EPA-8260	94.9	3		50	150	08/20/2018	DLC
Methyl T-Butyl Ether - BS	EPA-8260	108			50	150	08/20/2018	DLC
Methyl T-Butyl Ether - BSD	EPA-8260	107	2		50	150	08/20/2018	DLC
Trans-1,2-Dichloroethene - BS	EPA-8260	108			50	150	08/20/2018	DLC
Trans-1,2-Dichloroethene - BSD	EPA-8260	104	4		50	150	08/20/2018	DLC
1,1-Dichloroethane - BS	EPA-8260	102			50	150	08/20/2018	DLC
1,1-Dichloroethane - BSD	EPA-8260	93.1	9		50	150	08/20/2018	DLC
2-Butanone - BS	EPA-8260	76.7			50	150	08/20/2018	DLC
2-Butanone - BSD	EPA-8260	71.0	8		50	150	08/20/2018	DLC
Cis-1,2-Dichloroethene - BS	EPA-8260	103			50	150	08/20/2018	DLC
Cis-1,2-Dichloroethene - BSD	EPA-8260	99.8	3		50	150	08/20/2018	DLC
2,2-Dichloropropane - BS	EPA-8260	111			50	150	08/20/2018	DLC
2,2-Dichloropropane - BSD	EPA-8260	108	2		50	150	08/20/2018	DLC
Bromochloromethane - BS	EPA-8260	95.2			50	150	08/20/2018	DLC
Bromochloromethane - BSD	EPA-8260	94.5	1		50	150	08/20/2018	DLC
Chloroform - BS	EPA-8260	114			50	150	08/20/2018	DLC
Chloroform - BSD	EPA-8260	112	2		50	150	08/20/2018	DLC
1,1,1-Trichloroethane - BS	EPA-8260	103			50	150	08/20/2018	DLC
1,1,1-Trichloroethane - BSD	EPA-8260	101	2		50	150	08/20/2018	DLC
1,1-Dichloropropene - BS	EPA-8260	100			50	150	08/20/2018	DLC
1,1-Dichloropropene - BSD	EPA-8260	98.3	2		50	150	08/20/2018	DLC
1,2-Dichloroethane - BS	EPA-8260	93.6			50	150	08/20/2018	DLC
1,2-Dichloroethane - BSD	EPA-8260	92.1	2		50	150	08/20/2018	DLC
Benzene - BS	EPA-8260	94.3			75	138	08/20/2018	DLC
Benzene - BSD	EPA-8260	92.5	2		75	138	08/20/2018	DLC
Trichloroethene - BS	EPA-8260	97.0			75	136	08/20/2018	DLC
Trichloroethene - BSD	EPA-8260	94.9	2		75	136	08/20/2018	DLC
1,2-Dichloropropane - BS	EPA-8260	95.0			50	150	08/20/2018	DLC
1,2-Dichloropropane - BSD	EPA-8260	92.9	2		50	150	08/20/2018	DLC
Dibromomethane - BS	EPA-8260	97.5			50	150	08/20/2018	DLC
Dibromomethane - BSD	EPA-8260	94.4	3		50	150	08/20/2018	DLC
Bromodichloromethane - BS	EPA-8260	95.4			50	150	08/20/2018	DLC

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CLIENT CONTACT:	Eric Dubcak		
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LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Bromodichloromethane - BSD	EPA-8260	93.9	2		50	150	08/20/2018	DLC
Trans-1,3-Dichloropropene - BS	EPA-8260	116			50	150	08/20/2018	DLC
Trans-1,3-Dichloropropene - BSD	EPA-8260	116	0		50	150	08/20/2018	DLC
4-Methyl-2-Pentanone - BS	EPA-8260	79.5			50	150	08/20/2018	DLC
4-Methyl-2-Pentanone - BSD	EPA-8260	79.0	1		50	150	08/20/2018	DLC
Toluene - BS	EPA-8260	97.3			71.6	122.1	08/20/2018	DLC
Toluene - BSD	EPA-8260	94.1	3		71.6	122.1	08/20/2018	DLC
Cis-1,3-Dichloropropene - BS	EPA-8260	106			50	150	08/20/2018	DLC
Cis-1,3-Dichloropropene - BSD	EPA-8260	104	2		50	150	08/20/2018	DLC
1,1,2-Trichloroethane - BS	EPA-8260	100			50	150	08/20/2018	DLC
1,1,2-Trichloroethane - BSD	EPA-8260	101	0		50	150	08/20/2018	DLC
2-Hexanone - BS	EPA-8260	70.4			50	150	08/20/2018	DLC
2-Hexanone - BSD	EPA-8260	63.3	11		50	150	08/20/2018	DLC
1,3-Dichloropropane - BS	EPA-8260	97.1			50	150	08/20/2018	DLC
1,3-Dichloropropane - BSD	EPA-8260	96.5	1		50	150	08/20/2018	DLC
Tetrachloroethylene - BS	EPA-8260	111			50	150	08/20/2018	DLC
Tetrachloroethylene - BSD	EPA-8260	111	0		50	150	08/20/2018	DLC
Dibromochloromethane - BS	EPA-8260	110			50	150	08/20/2018	DLC
Dibromochloromethane - BSD	EPA-8260	110	1		50	150	08/20/2018	DLC
1,2-Dibromoethane - BS	EPA-8260	106			50	150	08/20/2018	DLC
1,2-Dibromoethane - BSD	EPA-8260	105	0		50	150	08/20/2018	DLC
Chlorobenzene - BS	EPA-8260	111			79	128	08/20/2018	DLC
Chlorobenzene - BSD	EPA-8260	110	1		79	128	08/20/2018	DLC
1,1,1,2-Tetrachloroethane - BS	EPA-8260	105			50	150	08/20/2018	DLC
1,1,1,2-Tetrachloroethane - BSD	EPA-8260	105	0		50	150	08/20/2018	DLC
Ethylbenzene - BS	EPA-8260	103			50	150	08/20/2018	DLC
Ethylbenzene - BSD	EPA-8260	102	1		50	150	08/20/2018	DLC
m,p-Xylene - BS	EPA-8260	104			50	150	08/20/2018	DLC
m,p-Xylene - BSD	EPA-8260	104	1		50	150	08/20/2018	DLC
Styrene - BS	EPA-8260	112			50	150	08/20/2018	DLC
Styrene - BSD	EPA-8260	113	1		50	150	08/20/2018	DLC
o-Xylene - BS	EPA-8260	115			50	150	08/20/2018	DLC
o-Xylene - BSD	EPA-8260	114	0		50	150	08/20/2018	DLC
Bromoform - BS	EPA-8260	125			50	150	08/20/2018	DLC
Bromoform - BSD	EPA-8260	124	1		50	150	08/20/2018	DLC
Isopropylbenzene - BS	EPA-8260	112			50	150	08/20/2018	DLC
Isopropylbenzene - BSD	EPA-8260	112	0		50	150	08/20/2018	DLC
1,1,2,2-Tetrachloroethane - BS	EPA-8260	91.3			50	150	08/20/2018	DLC
1,1,2,2-Tetrachloroethane - BSD	EPA-8260	91.4	0		50	150	08/20/2018	DLC
1,2,3-Trichloropropane - BS	EPA-8260	94.5			50	150	08/20/2018	DLC

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ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626

ALS Group USA, Corp dba ALS Environmental



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
1,2,3-Trichloropropane - BSD	EPA-8260	92.8	2		50	150	08/20/2018	DLC
Bromobenzene - BS	EPA-8260	102			50	150	08/20/2018	DLC
Bromobenzene - BSD	EPA-8260	101	1		50	150	08/20/2018	DLC
N-Propyl Benzene - BS	EPA-8260	93.6			50	150	08/20/2018	DLC
N-Propyl Benzene - BSD	EPA-8260	92.0	2		50	150	08/20/2018	DLC
2-Chlorotoluene - BS	EPA-8260	102			50	150	08/20/2018	DLC
2-Chlorotoluene - BSD	EPA-8260	102	0		50	150	08/20/2018	DLC
1,3,5-Trimethylbenzene - BS	EPA-8260	102			50	150	08/20/2018	DLC
1,3,5-Trimethylbenzene - BSD	EPA-8260	100	1		50	150	08/20/2018	DLC
4-Chlorotoluene - BS	EPA-8260	101			50	150	08/20/2018	DLC
4-Chlorotoluene - BSD	EPA-8260	101	1		50	150	08/20/2018	DLC
T-Butyl Benzene - BS	EPA-8260	126			50	150	08/20/2018	DLC
T-Butyl Benzene - BSD	EPA-8260	125	1		50	150	08/20/2018	DLC
1,2,4-Trimethylbenzene - BS	EPA-8260	102			50	150	08/20/2018	DLC
1,2,4-Trimethylbenzene - BSD	EPA-8260	100	2		50	150	08/20/2018	DLC
S-Butyl Benzene - BS	EPA-8260	100			50	150	08/20/2018	DLC
S-Butyl Benzene - BSD	EPA-8260	99.1	1		50	150	08/20/2018	DLC
P-Isopropyltoluene - BS	EPA-8260	105			50	150	08/20/2018	DLC
P-Isopropyltoluene - BSD	EPA-8260	104	1		50	150	08/20/2018	DLC
1,3-Dichlorobenzene - BS	EPA-8260	98.3			50	150	08/20/2018	DLC
1,3-Dichlorobenzene - BSD	EPA-8260	97.6	1		50	150	08/20/2018	DLC
1,4-Dichlorobenzene - BS	EPA-8260	104			50	150	08/20/2018	DLC
1,4-Dichlorobenzene - BSD	EPA-8260	103	1		50	150	08/20/2018	DLC
N-Butylbenzene - BS	EPA-8260	96.1			50	150	08/20/2018	DLC
N-Butylbenzene - BSD	EPA-8260	95.4	1		50	150	08/20/2018	DLC
1,2-Dichlorobenzene - BS	EPA-8260	96.4			50	150	08/20/2018	DLC
1,2-Dichlorobenzene - BSD	EPA-8260	97.0	1		50	150	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane - BS	EPA-8260	89.5			50	150	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane - BSD	EPA-8260	88.4	1		50	150	08/20/2018	DLC
1,2,4-Trichlorobenzene - BS	EPA-8260	110			50	150	08/20/2018	DLC
1,2,4-Trichlorobenzene - BSD	EPA-8260	108	2		50	150	08/20/2018	DLC
Hexachlorobutadiene - BS	EPA-8260	119			50	150	08/20/2018	DLC
Hexachlorobutadiene - BSD	EPA-8260	118	1		50	150	08/20/2018	DLC
Naphthalene - BS	EPA-8260	106			50	150	08/20/2018	DLC
Naphthalene - BSD	EPA-8260	105	2		50	150	08/20/2018	DLC
1,2,3-Trichlorobenzene - BS	EPA-8260	105			50	150	08/20/2018	DLC
1,2,3-Trichlorobenzene - BSD	EPA-8260	105	0		50	150	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043

DATE: 9/14/2018
ALS SDG#: EV18080100
WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Dubcak
CLIENT PROJECT: 81187331

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 131691 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Dichlorodifluoromethane - BS	EPA-8260	111			50	150	08/20/2018	DLC
Dichlorodifluoromethane - BSD	EPA-8260	111	0		50	150	08/20/2018	DLC
Chloromethane - BS	EPA-8260	75.6			50	150	08/20/2018	DLC
Chloromethane - BSD	EPA-8260	75.8	0		50	150	08/20/2018	DLC
Vinyl Chloride - BS	EPA-8260	97.0			50	150	08/20/2018	DLC
Vinyl Chloride - BSD	EPA-8260	98.7	2		50	150	08/20/2018	DLC
Bromomethane - BS	EPA-8260	103			50	150	08/20/2018	DLC
Bromomethane - BSD	EPA-8260	108	4		50	150	08/20/2018	DLC
Chloroethane - BS	EPA-8260	105			50	150	08/20/2018	DLC
Chloroethane - BSD	EPA-8260	105	0		50	150	08/20/2018	DLC
Carbon Tetrachloride - BS	EPA-8260	92.1			50	150	08/20/2018	DLC
Carbon Tetrachloride - BSD	EPA-8260	94.6	3		50	150	08/20/2018	DLC
Trichlorofluoromethane - BS	EPA-8260	100			50	150	08/20/2018	DLC
Trichlorofluoromethane - BSD	EPA-8260	103	3		50	150	08/20/2018	DLC
Carbon Disulfide - BS	EPA-8260	102			50	150	08/20/2018	DLC
Carbon Disulfide - BSD	EPA-8260	104	2		50	150	08/20/2018	DLC
Acetone - BS	EPA-8260	71.1			50	150	08/20/2018	DLC
Acetone - BSD	EPA-8260	72.3	2		50	150	08/20/2018	DLC
1,1-Dichloroethene - BS	EPA-8260	99.1			72.5	136	08/20/2018	DLC
1,1-Dichloroethene - BSD	EPA-8260	101	2		72.5	136	08/20/2018	DLC
Methylene Chloride - BS	EPA-8260	87.4			50	150	08/20/2018	DLC
Methylene Chloride - BSD	EPA-8260	90.9	4		50	150	08/20/2018	DLC
Acrylonitrile - BS	EPA-8260	99.9			50	150	08/20/2018	DLC
Acrylonitrile - BSD	EPA-8260	102	2		50	150	08/20/2018	DLC
Methyl T-Butyl Ether - BS	EPA-8260	104			50	150	08/20/2018	DLC
Methyl T-Butyl Ether - BSD	EPA-8260	106	1		50	150	08/20/2018	DLC
Trans-1,2-Dichloroethene - BS	EPA-8260	103			50	150	08/20/2018	DLC
Trans-1,2-Dichloroethene - BSD	EPA-8260	104	1		50	150	08/20/2018	DLC
1,1-Dichloroethane - BS	EPA-8260	103			50	150	08/20/2018	DLC
1,1-Dichloroethane - BSD	EPA-8260	104	1		50	150	08/20/2018	DLC
2-Butanone - BS	EPA-8260	71.4			50	150	08/20/2018	DLC
2-Butanone - BSD	EPA-8260	71.9	1		50	150	08/20/2018	DLC
Cis-1,2-Dichloroethene - BS	EPA-8260	106			50	150	08/20/2018	DLC
Cis-1,2-Dichloroethene - BSD	EPA-8260	107	1		50	150	08/20/2018	DLC
2,2-Dichloropropane - BS	EPA-8260	133			50	150	08/20/2018	DLC
2,2-Dichloropropane - BSD	EPA-8260	133	0		50	150	08/20/2018	DLC
Bromochloromethane - BS	EPA-8260	104			50	150	08/20/2018	DLC
Bromochloromethane - BSD	EPA-8260	106	1		50	150	08/20/2018	DLC
Chloroform - BS	EPA-8260	98.9			50	150	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Chloroform - BSD	EPA-8260	99.9	1		50	150	08/20/2018	DLC
1,1,1-Trichloroethane - BS	EPA-8260	102			50	150	08/20/2018	DLC
1,1,1-Trichloroethane - BSD	EPA-8260	104	2		50	150	08/20/2018	DLC
1,1-Dichloropropene - BS	EPA-8260	101			50	150	08/20/2018	DLC
1,1-Dichloropropene - BSD	EPA-8260	103	1		50	150	08/20/2018	DLC
1,2-Dichloroethane - BS	EPA-8260	94.2			50	150	08/20/2018	DLC
1,2-Dichloroethane - BSD	EPA-8260	95.7	2		50	150	08/20/2018	DLC
Benzene - BS	EPA-8260	98.0			74.7	143	08/20/2018	DLC
Benzene - BSD	EPA-8260	99.3	1		74.7	143	08/20/2018	DLC
Trichloroethene - BS	EPA-8260	98.5			74.4	141	08/20/2018	DLC
Trichloroethene - BSD	EPA-8260	99.6	1		74.4	141	08/20/2018	DLC
1,2-Dichloropropane - BS	EPA-8260	102			50	150	08/20/2018	DLC
1,2-Dichloropropane - BSD	EPA-8260	103	1		50	150	08/20/2018	DLC
Dibromomethane - BS	EPA-8260	100			50	150	08/20/2018	DLC
Dibromomethane - BSD	EPA-8260	102	2		50	150	08/20/2018	DLC
Bromodichloromethane - BS	EPA-8260	101			50	150	08/20/2018	DLC
Bromodichloromethane - BSD	EPA-8260	102	2		50	150	08/20/2018	DLC
Trans-1,3-Dichloropropene - BS	EPA-8260	110			50	150	08/20/2018	DLC
Trans-1,3-Dichloropropene - BSD	EPA-8260	111	1		50	150	08/20/2018	DLC
4-Methyl-2-Pentanone - BS	EPA-8260	75.3			50	150	08/20/2018	DLC
4-Methyl-2-Pentanone - BSD	EPA-8260	76.0	1		50	150	08/20/2018	DLC
Toluene - BS	EPA-8260	103			71.7	139	08/20/2018	DLC
Toluene - BSD	EPA-8260	104	1		71.7	139	08/20/2018	DLC
Cis-1,3-Dichloropropene - BS	EPA-8260	106			50	150	08/20/2018	DLC
Cis-1,3-Dichloropropene - BSD	EPA-8260	107	1		50	150	08/20/2018	DLC
1,1,2-Trichloroethane - BS	EPA-8260	107			50	150	08/20/2018	DLC
1,1,2-Trichloroethane - BSD	EPA-8260	108	1		50	150	08/20/2018	DLC
2-Hexanone - BS	EPA-8260	75.3			50	150	08/20/2018	DLC
2-Hexanone - BSD	EPA-8260	75.4	0		50	150	08/20/2018	DLC
1,3-Dichloropropane - BS	EPA-8260	104			50	150	08/20/2018	DLC
1,3-Dichloropropane - BSD	EPA-8260	105	1		50	150	08/20/2018	DLC
Tetrachloroethylene - BS	EPA-8260	109			50	150	08/20/2018	DLC
Tetrachloroethylene - BSD	EPA-8260	111	2		50	150	08/20/2018	DLC
Dibromochloromethane - BS	EPA-8260	111			50	150	08/20/2018	DLC
Dibromochloromethane - BSD	EPA-8260	112	1		50	150	08/20/2018	DLC
1,2-Dibromoethane - BS	EPA-8260	109			50	150	08/20/2018	DLC
1,2-Dibromoethane - BSD	EPA-8260	110	1		50	150	08/20/2018	DLC
Chlorobenzene - BS	EPA-8260	110			73	131	08/20/2018	DLC
Chlorobenzene - BSD	EPA-8260	111	1		73	131	08/20/2018	DLC
1,1,1,2-Tetrachloroethane - BS	EPA-8260	112			50	150	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
1,1,1,2-Tetrachloroethane - BSD	EPA-8260	112	0		50	150	08/20/2018	DLC
Ethylbenzene - BS	EPA-8260	108			50	150	08/20/2018	DLC
Ethylbenzene - BSD	EPA-8260	109	1		50	150	08/20/2018	DLC
m,p-Xylene - BS	EPA-8260	110			50	150	08/20/2018	DLC
m,p-Xylene - BSD	EPA-8260	110	0		50	150	08/20/2018	DLC
Styrene - BS	EPA-8260	111			50	150	08/20/2018	DLC
Styrene - BSD	EPA-8260	111	0		50	150	08/20/2018	DLC
o-Xylene - BS	EPA-8260	111			50	150	08/20/2018	DLC
o-Xylene - BSD	EPA-8260	111	0		50	150	08/20/2018	DLC
Bromoform - BS	EPA-8260	110			50	150	08/20/2018	DLC
Bromoform - BSD	EPA-8260	111	1		50	150	08/20/2018	DLC
Isopropylbenzene - BS	EPA-8260	110			50	150	08/20/2018	DLC
Isopropylbenzene - BSD	EPA-8260	110	0		50	150	08/20/2018	DLC
1,1,2,2-Tetrachloroethane - BS	EPA-8260	99.2			50	150	08/20/2018	DLC
1,1,2,2-Tetrachloroethane - BSD	EPA-8260	100	1		50	150	08/20/2018	DLC
1,2,3-Trichloropropane - BS	EPA-8260	100			50	150	08/20/2018	DLC
1,2,3-Trichloropropane - BSD	EPA-8260	101	1		50	150	08/20/2018	DLC
Bromobenzene - BS	EPA-8260	108			50	150	08/20/2018	DLC
Bromobenzene - BSD	EPA-8260	110	2		50	150	08/20/2018	DLC
N-Propyl Benzene - BS	EPA-8260	103			50	150	08/20/2018	DLC
N-Propyl Benzene - BSD	EPA-8260	104	1		50	150	08/20/2018	DLC
2-Chlorotoluene - BS	EPA-8260	103			50	150	08/20/2018	DLC
2-Chlorotoluene - BSD	EPA-8260	103	1		50	150	08/20/2018	DLC
1,3,5-Trimethylbenzene - BS	EPA-8260	105			50	150	08/20/2018	DLC
1,3,5-Trimethylbenzene - BSD	EPA-8260	105	1		50	150	08/20/2018	DLC
4-Chlorotoluene - BS	EPA-8260	103			50	150	08/20/2018	DLC
4-Chlorotoluene - BSD	EPA-8260	104	1		50	150	08/20/2018	DLC
T-Butyl Benzene - BS	EPA-8260	99.4			50	150	08/20/2018	DLC
T-Butyl Benzene - BSD	EPA-8260	100	1		50	150	08/20/2018	DLC
1,2,4-Trimethylbenzene - BS	EPA-8260	104			50	150	08/20/2018	DLC
1,2,4-Trimethylbenzene - BSD	EPA-8260	106	1		50	150	08/20/2018	DLC
S-Butyl Benzene - BS	EPA-8260	104			50	150	08/20/2018	DLC
S-Butyl Benzene - BSD	EPA-8260	105	1		50	150	08/20/2018	DLC
P-Isopropyltoluene - BS	EPA-8260	107			50	150	08/20/2018	DLC
P-Isopropyltoluene - BSD	EPA-8260	108	1		50	150	08/20/2018	DLC
1,3-Dichlorobenzene - BS	EPA-8260	108			50	150	08/20/2018	DLC
1,3-Dichlorobenzene - BSD	EPA-8260	110	2		50	150	08/20/2018	DLC
1,4-Dichlorobenzene - BS	EPA-8260	108			50	150	08/20/2018	DLC
1,4-Dichlorobenzene - BSD	EPA-8260	109	0		50	150	08/20/2018	DLC
N-Butylbenzene - BS	EPA-8260	105			50	150	08/20/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
N-Butylbenzene - BSD	EPA-8260	106	0		50	150	08/20/2018	DLC
1,2-Dichlorobenzene - BS	EPA-8260	108			50	150	08/20/2018	DLC
1,2-Dichlorobenzene - BSD	EPA-8260	109	1		50	150	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane - BS	EPA-8260	96.4			50	150	08/20/2018	DLC
1,2-Dibromo 3-Chloropropane - BSD	EPA-8260	97.5	1		50	150	08/20/2018	DLC
1,2,4-Trichlorobenzene - BS	EPA-8260	113			50	150	08/20/2018	DLC
1,2,4-Trichlorobenzene - BSD	EPA-8260	114	1		50	150	08/20/2018	DLC
Hexachlorobutadiene - BS	EPA-8260	112			50	150	08/20/2018	DLC
Hexachlorobutadiene - BSD	EPA-8260	114	1		50	150	08/20/2018	DLC
Naphthalene - BS	EPA-8260	110			50	150	08/20/2018	DLC
Naphthalene - BSD	EPA-8260	111	1		50	150	08/20/2018	DLC
1,2,3-Trichlorobenzene - BS	EPA-8260	113			50	150	08/20/2018	DLC
1,2,3-Trichlorobenzene - BSD	EPA-8260	114	1		50	150	08/20/2018	DLC

ALS Test Batch ID: 131827 - Soil by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Pyridine - BS	EPA-8270	62.5			20	150	08/23/2018	JMK
Pyridine - BSD	EPA-8270	73.3	16		20	150	08/23/2018	JMK
N-Nitrosodimethylamine - BS	EPA-8270	91.9			20	150	08/23/2018	JMK
N-Nitrosodimethylamine - BSD	EPA-8270	99.8	8		20	150	08/23/2018	JMK
Phenol - BS	EPA-8270	84.1			36.1	131	08/23/2018	JMK
Phenol - BSD	EPA-8270	88.2	5		36.1	131	08/23/2018	JMK
Aniline - BS	EPA-8270	80.4			20	150	08/23/2018	JMK
Aniline - BSD	EPA-8270	84.2	5		20	150	08/23/2018	JMK
Bis(2-Chloroethyl)Ether - BS	EPA-8270	85.9			20	150	08/23/2018	JMK
Bis(2-Chloroethyl)Ether - BSD	EPA-8270	88.3	3		20	150	08/23/2018	JMK
2-Chlorophenol - BS	EPA-8270	82.1			59.9	111	08/23/2018	JMK
2-Chlorophenol - BSD	EPA-8270	85.8	4		59.9	111	08/23/2018	JMK
1,3-Dichlorobenzene - BS	EPA-8270	76.0			20	150	08/23/2018	JMK
1,3-Dichlorobenzene - BSD	EPA-8270	80.3	6		20	150	08/23/2018	JMK
1,4-Dichlorobenzene - BS	EPA-8270	77.2			44.3	122	08/23/2018	JMK
1,4-Dichlorobenzene - BSD	EPA-8270	82.3	6		44.3	122	08/23/2018	JMK
Benzyl Alcohol - BS	EPA-8270	101			20	150	08/23/2018	JMK
Benzyl Alcohol - BSD	EPA-8270	106	5		20	150	08/23/2018	JMK
1,2-Dichlorobenzene - BS	EPA-8270	78.1			20	150	08/23/2018	JMK
1,2-Dichlorobenzene - BSD	EPA-8270	81.7	5		20	150	08/23/2018	JMK
2-Methylphenol - BS	EPA-8270	80.6			20	150	08/23/2018	JMK
2-Methylphenol - BSD	EPA-8270	85.4	6		20	150	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether - BS	EPA-8270	82.2			20	150	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Bis(2-Chloroisopropyl)Ether - BSD	EPA-8270	84.5	3		20	150	08/23/2018	JMK
3&4-Methylphenol - BS	EPA-8270	83.6			20	150	08/23/2018	JMK
3&4-Methylphenol - BSD	EPA-8270	86.9	4		20	150	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	95.8			31.6	134	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	100	5		31.6	134	08/23/2018	JMK
Hexachloroethane - BS	EPA-8270	75.2			20	150	08/23/2018	JMK
Hexachloroethane - BSD	EPA-8270	79.1	5		20	150	08/23/2018	JMK
Nitrobenzene - BS	EPA-8270	80.9			20	150	08/23/2018	JMK
Nitrobenzene - BSD	EPA-8270	84.2	4		20	150	08/23/2018	JMK
Isophorone - BS	EPA-8270	61.3			20	150	08/23/2018	JMK
Isophorone - BSD	EPA-8270	63.7	4		20	150	08/23/2018	JMK
2-Nitrophenol - BS	EPA-8270	84.5			20	150	08/23/2018	JMK
2-Nitrophenol - BSD	EPA-8270	86.0	2		20	150	08/23/2018	JMK
2,4-Dimethylphenol - BS	EPA-8270	60.3			20	150	08/23/2018	JMK
2,4-Dimethylphenol - BSD	EPA-8270	65.7	9		20	150	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane - BS	EPA-8270	81.0			20	150	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane - BSD	EPA-8270	84.1	4		20	150	08/23/2018	JMK
2,4-Dichlorophenol - BS	EPA-8270	83.5			20	150	08/23/2018	JMK
2,4-Dichlorophenol - BSD	EPA-8270	87.7	5		20	150	08/23/2018	JMK
1,2,4-Trichlorobenzene - BS	EPA-8270	76.5			44.6	122	08/23/2018	JMK
1,2,4-Trichlorobenzene - BSD	EPA-8270	78.8	3		44.6	122	08/23/2018	JMK
Naphthalene - BS	EPA-8270	78.2			20	150	08/23/2018	JMK
Naphthalene - BSD	EPA-8270	81.6	4		20	150	08/23/2018	JMK
4-Chloroaniline - BS	EPA-8270	76.9			20	150	08/23/2018	JMK
4-Chloroaniline - BSD	EPA-8270	81.0	5		20	150	08/23/2018	JMK
Hexachlorobutadiene - BS	EPA-8270	74.5			20	150	08/23/2018	JMK
Hexachlorobutadiene - BSD	EPA-8270	78.0	5		20	150	08/23/2018	JMK
4-Chloro-3-Methylphenol - BS	EPA-8270	88.0			49.2	135	08/23/2018	JMK
4-Chloro-3-Methylphenol - BSD	EPA-8270	91.0	3		49.2	135	08/23/2018	JMK
2-Methylnaphthalene - BS	EPA-8270	84.1			20	150	08/23/2018	JMK
2-Methylnaphthalene - BSD	EPA-8270	86.5	3		20	150	08/23/2018	JMK
1-Methylnaphthalene - BS	EPA-8270	78.2			20	150	08/23/2018	JMK
1-Methylnaphthalene - BSD	EPA-8270	80.7	3		20	150	08/23/2018	JMK
Hexachlorocyclopentadiene - BS	EPA-8270	83.4			20	150	08/23/2018	JMK
Hexachlorocyclopentadiene - BSD	EPA-8270	85.0	2		20	150	08/23/2018	JMK
2,4,6-Trichlorophenol - BS	EPA-8270	90.4			20	150	08/23/2018	JMK
2,4,6-Trichlorophenol - BSD	EPA-8270	91.8	2		20	150	08/23/2018	JMK
2,4,5-Trichlorophenol - BS	EPA-8270	89.2			20	150	08/23/2018	JMK
2,4,5-Trichlorophenol - BSD	EPA-8270	91.1	2		20	150	08/23/2018	JMK
2-Chloronaphthalene - BS	EPA-8270	82.3			20	150	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
2-Chloronaphthalene - BSD	EPA-8270	82.8	1		20	150	08/23/2018	JMK
2-Nitroaniline - BS	EPA-8270	163		S	20	150	08/23/2018	JMK
2-Nitroaniline - BSD	EPA-8270	167	2	S	20	150	08/23/2018	JMK
Acenaphthylene - BS	EPA-8270	84.5			20	150	08/23/2018	JMK
Acenaphthylene - BSD	EPA-8270	86.1	2		20	150	08/23/2018	JMK
Dimethylphthalate - BS	EPA-8270	84.8			20	150	08/23/2018	JMK
Dimethylphthalate - BSD	EPA-8270	85.4	1		20	150	08/23/2018	JMK
2,6-Dinitrotoluene - BS	EPA-8270	88.1			20	150	08/23/2018	JMK
2,6-Dinitrotoluene - BSD	EPA-8270	89.9	2		20	150	08/23/2018	JMK
Acenaphthene - BS	EPA-8270	82.9			49.3	117	08/23/2018	JMK
Acenaphthene - BSD	EPA-8270	84.0	1		49.3	117	08/23/2018	JMK
3-Nitroaniline - BS	EPA-8270	163		S	20	150	08/23/2018	JMK
3-Nitroaniline - BSD	EPA-8270	167	2	S	20	150	08/23/2018	JMK
2,4-Dinitrophenol - BS	EPA-8270	85.1			20	150	08/23/2018	JMK
2,4-Dinitrophenol - BSD	EPA-8270	86.4	2		20	150	08/23/2018	JMK
4-Nitrophenol - BS	EPA-8270	102			29.8	137	08/23/2018	JMK
4-Nitrophenol - BSD	EPA-8270	104	2		29.8	137	08/23/2018	JMK
Dibenzofuran - BS	EPA-8270	84.7			20	150	08/23/2018	JMK
Dibenzofuran - BSD	EPA-8270	86.0	2		20	150	08/23/2018	JMK
2,4-Dinitrotoluene - BS	EPA-8270	87.6			55.3	130	08/23/2018	JMK
2,4-Dinitrotoluene - BSD	EPA-8270	89.0	2		55.3	130	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol - BS	EPA-8270	92.6			20	150	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol - BSD	EPA-8270	93.8	1		20	150	08/23/2018	JMK
Diethylphthalate - BS	EPA-8270	84.6			20	150	08/23/2018	JMK
Diethylphthalate - BSD	EPA-8270	84.7	0		20	150	08/23/2018	JMK
Fluorene - BS	EPA-8270	87.0			20	150	08/23/2018	JMK
Fluorene - BSD	EPA-8270	86.6	0		20	150	08/23/2018	JMK
4-Chlorophenyl-Phenylether - BS	EPA-8270	85.8			20	150	08/23/2018	JMK
4-Chlorophenyl-Phenylether - BSD	EPA-8270	85.9	0		20	150	08/23/2018	JMK
4-Nitroaniline - BS	EPA-8270	650		S	20	150	08/23/2018	JMK
4-Nitroaniline - BSD	EPA-8270	773	17	S	20	150	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol - BS	EPA-8270	99.1			20	150	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol - BSD	EPA-8270	103	4		20	150	08/23/2018	JMK
Azobenzene - BS	EPA-8270	83.7			20	150	08/23/2018	JMK
Azobenzene - BSD	EPA-8270	86.3	3		20	150	08/23/2018	JMK
4-Bromophenyl-Phenylether - BS	EPA-8270	86.4			20	150	08/23/2018	JMK
4-Bromophenyl-Phenylether - BSD	EPA-8270	88.5	2		20	150	08/23/2018	JMK
Hexachlorobenzene - BS	EPA-8270	83.1			20	150	08/23/2018	JMK
Hexachlorobenzene - BSD	EPA-8270	86.0	3		20	150	08/23/2018	JMK
Pentachlorophenol - BS	EPA-8270	87.5			41.3	113	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Pentachlorophenol - BSD	EPA-8270	91.7	5		41.3	113	08/23/2018	JMK
Phenanthrene - BS	EPA-8270	83.3			20	150	08/23/2018	JMK
Phenanthrene - BSD	EPA-8270	86.6	4		20	150	08/23/2018	JMK
Anthracene - BS	EPA-8270	81.6			20	150	08/23/2018	JMK
Anthracene - BSD	EPA-8270	85.7	5		20	150	08/23/2018	JMK
Carbazole - BS	EPA-8270	96.9			20	150	08/23/2018	JMK
Carbazole - BSD	EPA-8270	111	14		20	150	08/23/2018	JMK
Di-N-Butylphthalate - BS	EPA-8270	87.5			20	150	08/23/2018	JMK
Di-N-Butylphthalate - BSD	EPA-8270	88.7	1		20	150	08/23/2018	JMK
Fluoranthene - BS	EPA-8270	87.4			20	150	08/23/2018	JMK
Fluoranthene - BSD	EPA-8270	89.2	2		20	150	08/23/2018	JMK
Pyrene - BS	EPA-8270	84.4			57.4	145	08/23/2018	JMK
Pyrene - BSD	EPA-8270	86.8	3		57.4	145	08/23/2018	JMK
Butylbenzylphthalate - BS	EPA-8270	89.0			20	150	08/23/2018	JMK
Butylbenzylphthalate - BSD	EPA-8270	90.4	2		20	150	08/23/2018	JMK
Benzo[A]Anthracene - BS	EPA-8270	85.3			20	150	08/23/2018	JMK
Benzo[A]Anthracene - BSD	EPA-8270	87.0	2		20	150	08/23/2018	JMK
Chrysene - BS	EPA-8270	81.5			20	150	08/23/2018	JMK
Chrysene - BSD	EPA-8270	83.2	2		20	150	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate - BS	EPA-8270	91.5			20	150	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate - BSD	EPA-8270	93.2	2		20	150	08/23/2018	JMK
Di-N-Octylphthalate - BS	EPA-8270	88.7			20	150	08/23/2018	JMK
Di-N-Octylphthalate - BSD	EPA-8270	90.2	2		20	150	08/23/2018	JMK
Benzo[B]Fluoranthene - BS	EPA-8270	86.7			20	150	08/23/2018	JMK
Benzo[B]Fluoranthene - BSD	EPA-8270	88.4	2		20	150	08/23/2018	JMK
Benzo[K]Fluoranthene - BS	EPA-8270	85.1			20	150	08/23/2018	JMK
Benzo[K]Fluoranthene - BSD	EPA-8270	86.5	2		20	150	08/23/2018	JMK
Benzo[A]Pyrene - BS	EPA-8270	85.6			20	150	08/23/2018	JMK
Benzo[A]Pyrene - BSD	EPA-8270	86.9	2		20	150	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene - BS	EPA-8270	94.6			20	150	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene - BSD	EPA-8270	95.0	0		20	150	08/23/2018	JMK
Dibenz[A,H]Anthracene - BS	EPA-8270	94.7			20	150	08/23/2018	JMK
Dibenz[A,H]Anthracene - BSD	EPA-8270	95.0	0		20	150	08/23/2018	JMK
Benzo[G,H,I]Perylene - BS	EPA-8270	91.3			20	150	08/23/2018	JMK
Benzo[G,H,I]Perylene - BSD	EPA-8270	90.7	1		20	150	08/23/2018	JMK

S - Outside of control limits.



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 131851 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Pyridine - BS	EPA-8270	18.6		SQ3	20	150	08/23/2018	JMK
Pyridine - BSD	EPA-8270	19.6	5	SQ3	20	150	08/23/2018	JMK
N-Nitrosodimethylamine - BS	EPA-8270	40.8			20	150	08/23/2018	JMK
N-Nitrosodimethylamine - BSD	EPA-8270	44.5	9		20	150	08/23/2018	JMK
Phenol - BS	EPA-8270	26.5			5	84	08/23/2018	JMK
Phenol - BSD	EPA-8270	27.3	3		5	84	08/23/2018	JMK
Aniline - BS	EPA-8270	25.9			20	150	08/23/2018	JMK
Aniline - BSD	EPA-8270	26.0	0		20	150	08/23/2018	JMK
Bis(2-Chloroethyl)Ether - BS	EPA-8270	93.5			20	150	08/23/2018	JMK
Bis(2-Chloroethyl)Ether - BSD	EPA-8270	90.6	3		20	150	08/23/2018	JMK
2-Chlorophenol - BS	EPA-8270	74.0			45	111	08/23/2018	JMK
2-Chlorophenol - BSD	EPA-8270	75.1	2		45	111	08/23/2018	JMK
1,3-Dichlorobenzene - BS	EPA-8270	48.7			20	150	08/23/2018	JMK
1,3-Dichlorobenzene - BSD	EPA-8270	75.9	44		20	150	08/23/2018	JMK
1,4-Dichlorobenzene - BS	EPA-8270	50.7			27.1	114	08/23/2018	JMK
1,4-Dichlorobenzene - BSD	EPA-8270	77.8	42		27.1	114	08/23/2018	JMK
Benzyl Alcohol - BS	EPA-8270	62.2			20	150	08/23/2018	JMK
Benzyl Alcohol - BSD	EPA-8270	62.9	1		20	150	08/23/2018	JMK
1,2-Dichlorobenzene - BS	EPA-8270	52.1			20	150	08/23/2018	JMK
1,2-Dichlorobenzene - BSD	EPA-8270	77.3	39		20	150	08/23/2018	JMK
2-Methylphenol - BS	EPA-8270	63.8			20	150	08/23/2018	JMK
2-Methylphenol - BSD	EPA-8270	64.0	0		20	150	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether - BS	EPA-8270	82.6			20	150	08/23/2018	JMK
Bis(2-Chloroisopropyl)Ether - BSD	EPA-8270	83.2	1		20	150	08/23/2018	JMK
3&4-Methylphenol - BS	EPA-8270	58.3			20	150	08/23/2018	JMK
3&4-Methylphenol - BSD	EPA-8270	57.7	1		20	150	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	100			42.2	119	08/23/2018	JMK
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	101	0		42.2	119	08/23/2018	JMK
Hexachloroethane - BS	EPA-8270	44.0			20	150	08/23/2018	JMK
Hexachloroethane - BSD	EPA-8270	77.5	55		20	150	08/23/2018	JMK
Nitrobenzene - BS	EPA-8270	79.7			20	150	08/23/2018	JMK
Nitrobenzene - BSD	EPA-8270	85.9	7		20	150	08/23/2018	JMK
Isophorone - BS	EPA-8270	76.3			20	150	08/23/2018	JMK
Isophorone - BSD	EPA-8270	80.1	5		20	150	08/23/2018	JMK
2-Nitrophenol - BS	EPA-8270	86.4			20	150	08/23/2018	JMK
2-Nitrophenol - BSD	EPA-8270	84.7	2		20	150	08/23/2018	JMK
2,4-Dimethylphenol - BS	EPA-8270	71.7			20	150	08/23/2018	JMK
2,4-Dimethylphenol - BSD	EPA-8270	76.3	6		20	150	08/23/2018	JMK
Bis(2-Chloroethoxy)Methane - BS	EPA-8270	80.1			20	150	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Bis(2-Chloroethoxy)Methane - BSD	EPA-8270	84.9	6		20	150	08/23/2018	JMK
2,4-Dichlorophenol - BS	EPA-8270	79.8			20	150	08/23/2018	JMK
2,4-Dichlorophenol - BSD	EPA-8270	83.2	4		20	150	08/23/2018	JMK
1,2,4-Trichlorobenzene - BS	EPA-8270	51.5			29.4	120	08/23/2018	JMK
1,2,4-Trichlorobenzene - BSD	EPA-8270	76.6	39		29.4	120	08/23/2018	JMK
Naphthalene - BS	EPA-8270	60.7			20	150	08/23/2018	JMK
Naphthalene - BSD	EPA-8270	76.3	23		20	150	08/23/2018	JMK
4-Chloroaniline - BS	EPA-8270	61.3			20	150	08/23/2018	JMK
4-Chloroaniline - BSD	EPA-8270	74.8	20		20	150	08/23/2018	JMK
Hexachlorobutadiene - BS	EPA-8270	43.0			20	150	08/23/2018	JMK
Hexachlorobutadiene - BSD	EPA-8270	75.0	54		20	150	08/23/2018	JMK
4-Chloro-3-Methylphenol - BS	EPA-8270	81.9			44	113	08/23/2018	JMK
4-Chloro-3-Methylphenol - BSD	EPA-8270	85.1	4		44	113	08/23/2018	JMK
2-Methylnaphthalene - BS	EPA-8270	67.0			20	150	08/23/2018	JMK
2-Methylnaphthalene - BSD	EPA-8270	82.5	21		20	150	08/23/2018	JMK
1-Methylnaphthalene - BS	EPA-8270	65.8			20	150	08/23/2018	JMK
1-Methylnaphthalene - BSD	EPA-8270	76.1	15		20	150	08/23/2018	JMK
Hexachlorocyclopentadiene - BS	EPA-8270	40.1			20	150	08/23/2018	JMK
Hexachlorocyclopentadiene - BSD	EPA-8270	73.7	59		20	150	08/23/2018	JMK
2,4,6-Trichlorophenol - BS	EPA-8270	83.3			20	150	08/23/2018	JMK
2,4,6-Trichlorophenol - BSD	EPA-8270	90.0	8		20	150	08/23/2018	JMK
2,4,5-Trichlorophenol - BS	EPA-8270	82.4			20	150	08/23/2018	JMK
2,4,5-Trichlorophenol - BSD	EPA-8270	88.7	7		20	150	08/23/2018	JMK
2-Chloronaphthalene - BS	EPA-8270	65.4			20	150	08/23/2018	JMK
2-Chloronaphthalene - BSD	EPA-8270	81.9	22		20	150	08/23/2018	JMK
2-Nitroaniline - BS	EPA-8270	163		SQ1	20	150	08/23/2018	JMK
2-Nitroaniline - BSD	EPA-8270	169	4	S	20	150	08/23/2018	JMK
Acenaphthylene - BS	EPA-8270	78.0			20	150	08/23/2018	JMK
Acenaphthylene - BSD	EPA-8270	87.9	12		20	150	08/23/2018	JMK
Dimethylphthalate - BS	EPA-8270	81.9			20	150	08/23/2018	JMK
Dimethylphthalate - BSD	EPA-8270	84.2	3		20	150	08/23/2018	JMK
2,6-Dinitrotoluene - BS	EPA-8270	83.6			20	150	08/23/2018	JMK
2,6-Dinitrotoluene - BSD	EPA-8270	87.1	4		20	150	08/23/2018	JMK
Acenaphthene - BS	EPA-8270	72.4			41	107	08/23/2018	JMK
Acenaphthene - BSD	EPA-8270	81.0	11		41	107	08/23/2018	JMK
3-Nitroaniline - BS	EPA-8270	163		SQ1	20	150	08/23/2018	JMK
3-Nitroaniline - BSD	EPA-8270	169	4	S	20	150	08/23/2018	JMK
2,4-Dinitrophenol - BS	EPA-8270	74.6			20	150	08/23/2018	JMK
2,4-Dinitrophenol - BSD	EPA-8270	83.2	11		20	150	08/23/2018	JMK
4-Nitrophenol - BS	EPA-8270	34.8			5	63	08/23/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	9/14/2018
		ALS SDG#:	EV18080100
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	81187331		

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
4-Nitrophenol - BSD	EPA-8270	35.2	1		5	63	08/23/2018	JMK
Dibenzofuran - BS	EPA-8270	79.1			20	150	08/23/2018	JMK
Dibenzofuran - BSD	EPA-8270	85.8	8		20	150	08/23/2018	JMK
2,4-Dinitrotoluene - BS	EPA-8270	83.2			53.1	136	08/23/2018	JMK
2,4-Dinitrotoluene - BSD	EPA-8270	85.1	2		53.1	136	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol - BS	EPA-8270	84.9			20	150	08/23/2018	JMK
2,3,4,6-Tetrachlorophenol - BSD	EPA-8270	86.1	1		20	150	08/23/2018	JMK
Diethylphthalate - BS	EPA-8270	84.7			20	150	08/23/2018	JMK
Diethylphthalate - BSD	EPA-8270	83.4	2		20	150	08/23/2018	JMK
Fluorene - BS	EPA-8270	79.7			20	150	08/23/2018	JMK
Fluorene - BSD	EPA-8270	83.8	5		20	150	08/23/2018	JMK
4-Chlorophenyl-Phenylether - BS	EPA-8270	77.1			20	150	08/23/2018	JMK
4-Chlorophenyl-Phenylether - BSD	EPA-8270	83.1	8		20	150	08/23/2018	JMK
4-Nitroaniline - BS	EPA-8270	97.4			20	150	08/23/2018	JMK
4-Nitroaniline - BSD	EPA-8270	94.7	3		20	150	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol - BS	EPA-8270	90.3			20	150	08/23/2018	JMK
4,6-Dinitro-2-Methylphenol - BSD	EPA-8270	94.7	5		20	150	08/23/2018	JMK
Azobenzene - BS	EPA-8270	81.7			20	150	08/23/2018	JMK
Azobenzene - BSD	EPA-8270	88.0	7		20	150	08/23/2018	JMK
4-Bromophenyl-Phenylether - BS	EPA-8270	78.8			20	150	08/23/2018	JMK
4-Bromophenyl-Phenylether - BSD	EPA-8270	85.8	8		20	150	08/23/2018	JMK
Hexachlorobenzene - BS	EPA-8270	76.7			20	150	08/23/2018	JMK
Hexachlorobenzene - BSD	EPA-8270	81.0	5		20	150	08/23/2018	JMK
Pentachlorophenol - BS	EPA-8270	77.6			33	124	08/23/2018	JMK
Pentachlorophenol - BSD	EPA-8270	81.0	4		33	124	08/23/2018	JMK
Phenanthrene - BS	EPA-8270	78.8			20	150	08/23/2018	JMK
Phenanthrene - BSD	EPA-8270	83.2	5		20	150	08/23/2018	JMK
Anthracene - BS	EPA-8270	81.3			20	150	08/23/2018	JMK
Anthracene - BSD	EPA-8270	85.8	5		20	150	08/23/2018	JMK
Carbazole - BS	EPA-8270	54.9			20	150	08/23/2018	JMK
Carbazole - BSD	EPA-8270	59.9	9		20	150	08/23/2018	JMK
Di-N-Butylphthalate - BS	EPA-8270	85.3			20	150	08/23/2018	JMK
Di-N-Butylphthalate - BSD	EPA-8270	88.2	3		20	150	08/23/2018	JMK
Fluoranthene - BS	EPA-8270	81.8			20	150	08/23/2018	JMK
Fluoranthene - BSD	EPA-8270	84.6	3		20	150	08/23/2018	JMK
Pyrene - BS	EPA-8270	79.3			18	136	08/23/2018	JMK
Pyrene - BSD	EPA-8270	85.3	7		18	136	08/23/2018	JMK
Butylbenzylphthalate - BS	EPA-8270	87.3			20	150	08/23/2018	JMK
Butylbenzylphthalate - BSD	EPA-8270	92.1	5		20	150	08/23/2018	JMK
Benzo[A]Anthracene - BS	EPA-8270	80.9			20	150	08/23/2018	JMK

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ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626

ALS Group USA, Corp dba ALS Environmental



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS SDG#: EV18080100
WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Dubcak
CLIENT PROJECT: 81187331

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Benzo[A]Anthracene - BSD	EPA-8270	84.0	4		20	150	08/23/2018	JMK
Chrysene - BS	EPA-8270	76.7			20	150	08/23/2018	JMK
Chrysene - BSD	EPA-8270	79.5	4		20	150	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate - BS	EPA-8270	89.2			20	150	08/23/2018	JMK
Bis(2-Ethylhexyl)Phthalate - BSD	EPA-8270	94.3	6		20	150	08/23/2018	JMK
Di-N-Octylphthalate - BS	EPA-8270	85.6			20	150	08/23/2018	JMK
Di-N-Octylphthalate - BSD	EPA-8270	87.7	2		20	150	08/23/2018	JMK
Benzo[B]Fluoranthene - BS	EPA-8270	82.0			20	150	08/23/2018	JMK
Benzo[B]Fluoranthene - BSD	EPA-8270	87.3	6		20	150	08/23/2018	JMK
Benzo[K]Fluoranthene - BS	EPA-8270	81.0			20	150	08/23/2018	JMK
Benzo[K]Fluoranthene - BSD	EPA-8270	84.3	4		20	150	08/23/2018	JMK
Benzo[A]Pyrene - BS	EPA-8270	81.4			20	150	08/23/2018	JMK
Benzo[A]Pyrene - BSD	EPA-8270	83.9	3		20	150	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene - BS	EPA-8270	87.0			20	150	08/23/2018	JMK
Indeno[1,2,3-Cd]Pyrene - BSD	EPA-8270	87.0	0		20	150	08/23/2018	JMK
Dibenz[A,H]Anthracene - BS	EPA-8270	88.2			20	150	08/23/2018	JMK
Dibenz[A,H]Anthracene - BSD	EPA-8270	88.4	0		20	150	08/23/2018	JMK
Benzo[G,H,I]Perylene - BS	EPA-8270	81.9			20	150	08/23/2018	JMK
Benzo[G,H,I]Perylene - BSD	EPA-8270	83.3	2		20	150	08/23/2018	JMK

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

SQ3 - Spike outside of control limits due to sporadic marginal failure. All other spikes in extraction fraction within control limits.

ALS Test Batch ID: 131842 - Soil by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
PCB-1016 - BS	EPA-8082	80.0			50	150	08/20/2018	JMK
PCB-1016 - BSD	EPA-8082	85.1	6		50	150	08/20/2018	JMK
PCB-1260 - BS	EPA-8082	79.3			50	150	08/20/2018	JMK
PCB-1260 - BSD	EPA-8082	86.1	8		50	150	08/20/2018	JMK

ALS Test Batch ID: 131799 - Water by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
PCB-1016 - BS	EPA-8082	84.1			44	152	08/22/2018	PAB
PCB-1016 - BSD	EPA-8082	101	18		44	152	08/22/2018	PAB
PCB-1260 - BS	EPA-8082	103			44	152	08/22/2018	PAB
PCB-1260 - BSD	EPA-8082	112	8		44	152	08/22/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043
DATE: 9/14/2018
ALS SDG#: EV18080100
WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Dubcak
CLIENT PROJECT: 81187331

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R323419 - Soil by EPA-7196

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Chromium (VI) - BS	EPA-7196	98.0			91	114	09/14/2018	JMK
Chromium (VI) - BSD	EPA-7196	99.0	1		91	114	09/14/2018	JMK

ALS Test Batch ID: R322340 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Mercury - BS	EPA-7471	102			81.8	117	08/23/2018	RAL
Mercury - BSD	EPA-7471	103	1		81.8	117	08/23/2018	RAL

ALS Test Batch ID: R322339 - Water by EPA-245.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Mercury - BS	EPA-245.1	109			80.6	118	08/23/2018	RAL
Mercury - BSD	EPA-245.1	107	1		80.6	118	08/23/2018	RAL

ALS Test Batch ID: 131751 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BS	EPA-6020	101			80	120	08/22/2018	RAL
Arsenic - BSD	EPA-6020	100	1		80	120	08/22/2018	RAL
Cadmium - BS	EPA-6020	103			80	120	08/22/2018	RAL
Cadmium - BSD	EPA-6020	102	0		80	120	08/22/2018	RAL
Chromium - BS	EPA-6020	103			80	120	08/22/2018	RAL
Chromium - BSD	EPA-6020	103	0		80	120	08/22/2018	RAL
Lead - BS	EPA-6020	104			80	120	08/22/2018	RAL
Lead - BSD	EPA-6020	102	2		80	120	08/22/2018	RAL

ALS Test Batch ID: 131752 - Water by EPA-200.8

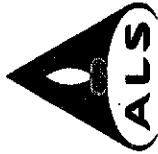
SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BS	EPA-200.8	104			89.1	110	08/22/2018	RAL
Arsenic - BSD	EPA-200.8	102	2		89.1	110	08/22/2018	RAL
Cadmium - BS	EPA-200.8	106			89.4	109	08/22/2018	RAL
Cadmium - BSD	EPA-200.8	104	1		89.4	109	08/22/2018	RAL
Chromium - BS	EPA-200.8	105			88.3	110.2	08/22/2018	RAL
Chromium - BSD	EPA-200.8	103	2		88.3	110.2	08/22/2018	RAL
Lead - BS	EPA-200.8	103			87.5	107	08/22/2018	RAL
Lead - BSD	EPA-200.8	102	1		87.5	107	08/22/2018	RAL

CERTIFICATE OF ANALYSIS

APPROVED BY



Technical Manager



ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job#

(Laboratory Use Only)

2/18080000

Date 8/17/18

Page 1 of 1

PROJECT ID: 81187331				ANALYSIS REQUESTED										OTHER (Specify)		RECEIVED IN GOOD CONDITION?											
REPORT TO COMPANY:	PROJECT MANAGER:	ADDRESS:	PHONE:	E-MAIL:	INVOICE TO COMPANY:	ATTENTION:	ADDRESS:	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021	MTBE by EPA 8021	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	Pesticides by EPA 8081	Metals-MTCA-9	Metals Other (Specify)	TCLP-Metals	VOA	Semi-Vol	Pest	Herbs	
1. B6-3	8/17/18	805	soil	1				X	X	X				X				X									
2. B4-7		950		2				X	X	X				X				X									
3. B3-6.5		1105		3				X	X	X				X				X									
4. B3-17.5		1125		4				X	X	X				X				X									
5. B1-6.5		1435		5				X	X	X				X				X									
6. B1-2.5		1430		6				X	X	X				X				X									
7. B5-2.5		1255		7				X	X	X				X				X									
8. B5-18		1305		8				X	X	X				X				X									
9. B2-3		1345		9				X	X	X				X				X									
10. B2		1410	Water	10				X	X	X				X				X									

SPECIAL INSTRUCTIONS @ Added 9/1/18 on 3day TAT

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Jeff Dobkins, Terracore, 8/17/18 1620

Received By: Shawn Robinson ASR 8/17/18 1620

2. Relinquished By:

Received By:

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis

Specify: 10 5 3 2 1 SAME DAY

Fuels & Hydrocarbon Analysis

5 3 1 SAME DAY

*Turnaround request less than standard may incur Rush Charges



August 31, 2018

Service Request No:E1800770

Rick Bagan
ALS Environmental
8620 Holly Drive #100
Everett, WA 98208

Laboratory Results for: EV18080100 Dioxins Furans Analysis

Dear Rick,

Enclosed are the results of the sample(s) submitted to our laboratory August 21, 2018
For your reference, these analyses have been assigned our service request number **E1800770**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2284. You may also contact me via email at Nicole.Brown@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Nicole Brown
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 713 266 1599 | FAX +1 713 266 0130
ALS Group USA, Corp.
dba ALS Environmental



Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client: ALS Group USA, Corp – Everett, WA
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request No.: E1800770
Date Received: 08/21/18

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Two soil samples were received for analysis at ALS Environmental in Houston on 08/21/18.

The samples were received at 13.8 °C in good condition and are consistent with the accompanying chain of custody form. Dioxin/furan compounds are stable at room temperature. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

B flags – Method Blanks

The Method Blank EQ1800346-01 contained low levels of 1234678-HpCDD, 1234678-HpCDF, OCDD and OCDF below the Method Reporting Limit (MRL). The associated compounds in the samples are flagged with 'B' flags where the sample result is less than ten times the level detected in the method blank.

MS/MSD

EQ1800346: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of an MS/MSD for this extraction batch.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- Non-detected compounds are not included in the 'Total'

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis

Service Request:E1800770

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E1800770-001	EV18080100-07 B5-2.5	8/17/2018	1255
E1800770-002	EV18080100-08 B5-18	8/17/2018	1305

Service Request Summary

Folder #: E1800770
Client Name: ALS Environmental - Everett
Project Name: EV18080100 Dioxins Furans Analysis
Project Number:

Report To: Rick Bagan
 ALS Environmental
 8620 Holly Drive #100
 Everett, WA 98208
 USA

Phone Number: 425-356-2600

Cell Number:

Fax Number:

E-mail: rick.bagan@alsglobal.com

Project Chemist: Nicole Brown
Originating Lab: HOUSTON
Logged By: ALOPEZ
Date Received: 08/21/18
Internal Due Date: 8/31/2018
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N
Report to MDL?: Y
P.O. Number: 32-EV18080100
EDD: No EDD Specified

2 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: EHRMS-WIC 1C

Pressure Gas:

				HOUSTON	
Lab Samp No.	Client Samp No	Matrix	Collected	Dioxins Furans/1613B	Total Solids/ALS SOP
E1800770-001	EV18080100-07	Soil	08/17/18 1255	II	II
E1800770-002	EV18080100-08	Soil	08/17/18 1305	II	II

Folder Comments:

Client requested results by noon 8/31

Data Qualifiers

HRMS Qualifier Set

- B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
- E Estimated value. The reported concentration is above the calibration range of the instrument.
- H Sample extracted and/or analyzed out of suggested holding time.
- J Estimated value. The reported concentration is below the MRL.
- K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits. The concentration of this analyte should be considered as an estimate.
- P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
- Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
- S Signal saturated detector. Result reported from dilution.
- U Compound was analyzed for, but was not detected (ND).
- X See Case Narrative.
- Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-noise ratios are greater than 10:1, making the recoveries acceptable.
 - i The MDL/MRL have been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCetration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01	11/30/2019
Arizona Department of Health Services	AZ0793	5/27/2019
Arkansas Department of Environmental Quality	17-027-0	3/27/2019
California Department of Health Services	2452	4/30/2019
Florida Department of Health	E87611	7/31/2019
Illinois Environmental Protection Agency	004112	5/29/2019
Kansas Department of Health and Environment	E-10406	7/31/2019
Louisiana Department of Environmental Quality	03048	6/30/2019
Louisiana Department of Health and Hospitals	LA150026	12/31/2018
Maine Center for Disease Control and Prevention	2014019	6/5/2020
Minnesota Department of Health	840911	12/31/2018
New Jersey Department of Environmental Protection	NLC140001	6/30/2019
New York Department of Health	11707	4/1/2019
Oklahoma Department of Environmental Quality	2014 124	8/31/2019
Pennsylvania Department of Environmental Protection	68-03441	6/30/2019
Tennessee Department of Environment and Conservation	04016	6/30/2019
Texas Commission on Environmental Quality	TX104704231-17-18	4/30/2019
Utah Department of Health Environmental Laboratory Certification	TX02694	7/3/2019
Washington Department of Health	c819	11/14/2018
West Virginia Department of Environmental Protection	347	6/30/2019

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID

E1800770

DB-5MSUI

SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:

08/31/18

Analyst:

Ja

Samples:

001, 002

Second Level - Data Review – to be filled by person doing peer review

Date:

08/31/18

Analyst:

LIA

Samples:

001, 002



Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
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Chain Of Custody/ Laboratory Analysis Request

E1800770

5

ALS Environmental
EV18080100 Dioxins Furans Analysis



Date 8/20/18 Page 1 Of 1

PROJECT ID: <u>EV18080100</u>					ANALYSIS REQUESTED															OTHER (Specify)												
REPORT TO COMPANY: <u>ALS Environmental</u>					NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTX by EPA 8021 ☐	BTEX by EPA 8260 ☐	MTBE by EPA 8021 ☐	MTBE by EPA 8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 ☐	Pesticides by EPA 8081 ☐	Metals-MTCA-5 ☐	RCRA-8 ☐	Pri Pol ☐	TAL ☐	Metals Other (Specify)	TCLP-Metals ☐	VOA ☐	Semi-Vol ☐	Pest ☐	Herbs ☐	Dioxins/Furans by EPA-1613	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
PROJECT MANAGER: <u>Rick Bagan</u>																																
ADDRESS: <u>8620 Holly Drive #100</u>																																
<u>Everett WA 98208</u>																																
PHONE: <u>(425) 356-2600</u> P.O. #: <u>32-EV18080100</u>																																
E-MAIL: <u>rick.bagan@alsglobal.com</u>																																
INVOICE TO COMPANY:																																
ATTENTION: <u>Same</u>																																
ADDRESS:																																
SAMPLE I.D.	DATE	TIME	TYPE	LAB#																												
1. <u>EV18080100-07</u>	<u>8/17/18</u>	<u>1255</u>	<u>S</u>																													
2. <u>EV18080100-08</u>	<u>8/17/18</u>	<u>1305</u>	<u>S</u>																													
3.																																
4.																																
5.																																
6.																																
7.																																
8.																																
9.																																
10.																																

SPECIAL INSTRUCTIONS Please email results by noon 8/31/18 ALS (National Contract Terracon)

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Shawn Robinson ALS 8/20/18 9:58am

Received By: _____

2. Relinquished By: E1800770

Received By: A Bunn ALS 8/21/18 0858

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis

10 5 3 2 1 SAME DAY

Fuels & Hydrocarbon Analysis

5 3 1 SAME DAY

OTHER:

Specify: _____

*Turnaround request less than standard may incur Rush Charges



Cooler Receipt Form

Project Chemist

MB

Client/Project

ALS Everett, WA / EV18080100

Thermometer ID

SM04

Date/Time Received:

8/21/18 0850

Initials:

MB

Date/Time Logged in:

8/21/18

Initials

MB

1. Method of delivery:

☐ US Mail☒ Fed Ex☐ UPS☐ DHL☐ Courier☐ Client

2. Samples received in:

☒ Cooler☐ Box☐ Envelope☐ Other

3. Were custody seals on coolers?

☐ Yes☒ NoIf yes, how many
and where?

Were they intact?

☐ Yes☐ No☒ N/A

Were they signed and dated?

☐ Yes☐ No☒ N/A

4. Packing Material:

☐ Inserts☐ Baggies☒ Bubble Wrap☒ Gel Packs☐ Wet Ice☐ Sleeves☐ Other

5. Foreign or Regulated Soil?

☐ Yes☒ No

Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
8133 8630 1880		8/21/18	1503	MB	13.4/13.8	☐
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)?

☒ Yes☐ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)?

☒ Yes☐ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)?

☒ Yes☐ No

9. Were appropriate bottles/containers and volumes received for the requested tests?

☒ Yes☐ No

10. Did sample labels and tags agree with custody documents?

☒ Yes☐ No

Notes, Discrepancies, & Resolutions:

Service request Label:

E1800770**5**ALS Environmental
EV18080100 Dioxine Furans Analysis



10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 320792
Team: Semivoa GCMS/TWOODS

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 8/28/18 11:00 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1800770-001	EV18080100-07	.01	1613B/Dioxins Furans			Soil	10.756g	Brown Mud
2	E1800770-002	EV18080100-08	.01	1613B/Dioxins Furans			Soil	10.596g	Grey Mud
3	E1800777-001	sludge	.01	1613B/Dioxins Furans			Sludge, Solid	10.566g	Brown Mud
4	EQ1800346-01	MB		1613B/Dioxins Furans			Solid	10.213g	
5	EQ1800346-02	LCS		1613B/Dioxins Furans			Solid	10.064g	
6	EQ1800346-03	DLCS		1613B/Dioxins Furans			Solid	10.283g	
7	J1805887-001	71623	.02	1613B/Dioxins Furans			Solid	10.259g	Brown + White Cardboard
8	K1806860-001	NDL38G16001-11 18-0863-001	.01	1613B/Dioxins Furans			Pulp Sheet	10.110g	APOSEY K- BALANCE -48 / White Paper Strips
9	K1807007-001	7/11/2018 18-0833-001	.01	1613B/Dioxins Furans			Paper	10.059g	White Paper Squares
10	K1807307-001	GT 18-030803015	.01	1613B/Dioxins Furans			Pulp Sheet	10.157g	White Paper Strips
11	K1807321-004	Composite	.01	1613B/Dioxins Furans			Paperboard	10.045g	Brown Paper Strips
12	K1807491-001	18-040807003	.02	1613B/Dioxins Furans			Paperboard	10.099g	White Paper Strips

Spiking Solutions

Name:	1613B Matrix Working Standard	Inventory ID	192373	Logbook Ref:	192373 AL 8/9/18 2-20 ng/mL	Expires On:	02/05/2019
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EQ1800346-02 100.00µL EQ1800346-03 100.00µL

Name:	8290/1613B Cleanup Working Standard	Inventory ID	192605	Logbook Ref:	TW 08/20/18 192605 8NG/ML	Expires On:	10/27/2018
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E1800770-001 100.00µL E1800770-002 100.00µL E1800777-001 100.00µL EQ1800346-01 100.00µL EQ1800346-02 100.00µL EQ1800346-03 100.00µL
J1805887-001 100.00µL K1806860-001 100.00µL K1807007-001 100.00µL K1807307-001 100.00µL K1807321-004 100.00µL K1807491-001 100.00µL

Name:	1613B Labeled Working Standard	Inventory ID	192722	Logbook Ref:	192719 JG 8/27/18 2-4ngml	Expires On:	01/09/2019
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E1800770-001 1,000.00µL E1800770-002 1,000.00µL E1800777-001 1,000.00µL EQ1800346-01 1,000.00µL EQ1800346-02 1,000.00µL EQ1800346-03 1,000.00µL
J1805887-001 1,000.00µL K1806860-001 1,000.00µL K1807007-001 1,000.00µL K1807307-001 1,000.00µL K1807321-004 1,000.00µL K1807491-001 1,000.00µL

Preparation Materials

Carbon, High Purity	AL 8/10/18 (192392)	Ethyl Acetate 99.9% Minimum EtOAc	tw ethyl acet 080218 (192158)	Glass Wool	GLASS WOOL (190875)
Hexanes 95%	AL 7/30/18 (192056)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	AL 6/28/18 (191236)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	AL 7/30/18 (192040)	Tridecane (n-Tridecane)	AL 7/30/18 (192037)	Silica Gel	AL 7/30/18 (192039)
sulfuric acid	SULFURIC ACID (190871)	Toluene 99.9% Minimum	AL 8/24/18 (192703)		

E1800770

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Preparation Information Benchsheet

Prep Run#: 320792
Team: Semivoa GCMS/TWOODS

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 8/28/18 11:00 AM

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Final Volume
Started:	8/28/18 11:00	Started:	8/29/18 13:00	Started:	8/30/18 12:00
Finished:	8/29/18 07:00	Finished:	8/29/18 14:00	Finished:	8/30/18 15:00
By:	ALOPEZ	By:	ALOPEZ	By:	ALOPEZ
Comments		Comments		Comments	

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By:	_____	Date:	_____	<u>Extracts Examined</u>
Received By:	_____	Date:	_____	Yes No

E1800770

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Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: 08/17/18 12:55
Date Received: 08/21/18 08:58

Sample Name: EV18080100-07
Lab Code: E1800770-001

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.756g

Date Analyzed: 08/31/18 03:48
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Data File Name: P614375
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	0.294JK		0.125	0.677	0.39	1.000	1
1,2,3,7,8-PeCDD	1.40J		0.0641	3.38	1.50	1.001	1
1,2,3,4,7,8-HxCDD	1.58J		0.104	3.38	1.39	1.000	1
1,2,3,6,7,8-HxCDD	14.4		0.115	3.38	1.28	1.000	1
1,2,3,7,8,9-HxCDD	4.04		0.101	3.38	1.23	1.008	1
1,2,3,4,6,7,8-HpCDD	126		0.124	3.38	1.05	1.000	1
OCDD	589		0.234	6.77	0.91	1.000	1
2,3,7,8-TCDF	0.808		0.0695	0.677	0.69	1.001	1
1,2,3,7,8-PeCDF	0.704JK		0.118	3.38	1.89	1.001	1
2,3,4,7,8-PeCDF	2.01J		0.120	3.38	1.66	1.002	1
1,2,3,4,7,8-HxCDF	3.72		0.196	3.38	1.29	1.000	1
1,2,3,6,7,8-HxCDF	3.94		0.201	3.38	1.28	1.000	1
1,2,3,7,8,9-HxCDF	0.988J		0.210	3.38	1.24	1.001	1
2,3,4,6,7,8-HxCDF	8.89		0.201	3.38	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	294		0.366	3.38	1.06	1.000	1
1,2,3,4,7,8,9-HpCDF	6.41		0.402	3.38	1.02	1.000	1
OCDF	669		0.0762	6.77	0.90	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: 08/17/18 12:55
Date Received: 08/21/18 08:58

Sample Name: EV18080100-07
Lab Code: E1800770-001

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.756g

Date Analyzed: 08/31/18 03:48
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Data File Name: P614375
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	11.1		0.125	0.677	0.80		1
Total Penta-Dioxins	15.5		0.0641	3.38	1.59		1
Total Hexa-Dioxins	74.4		0.106	3.38	1.28		1
Total Hepta-Dioxins	164		0.124	3.38	1.08		1
Total Tetra-Furans	15.8		0.0695	0.677	0.70		1
Total Penta-Furans	29.8		0.119	3.38	1.56		1
Total Hexa-Furans	268		0.202	3.38	1.23		1
Total Hepta-Furans	940		0.382	3.38	1.06		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: 08/17/18 12:55
Date Received: 08/21/18 08:58

Sample Name: EV18080100-07
Lab Code: E1800770-001

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.756g

Date Analyzed: 08/31/18 03:48
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Data File Name: P614375
ICAL Date: 03/29/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	959.592	48		25-164	0.79	1.030
13C-1,2,3,7,8-PeCDD	2000	1291.071	65		25-181	1.58	1.246
13C-1,2,3,4,7,8-HxCDD	2000	1367.171	68		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1211.423	61		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1349.927	67		23-140	1.07	1.071
13C-OCDD	4000	1654.399	41		17-157	0.92	1.141
13C-2,3,7,8-TCDF	2000	1267.534	63		24-169	0.79	0.988
13C-1,2,3,7,8-PeCDF	2000	1513.672	76		24-185	1.60	1.192
13C-2,3,4,7,8-PeCDF	2000	1377.535	69		21-178	1.60	1.233
13C-1,2,3,4,7,8-HxCDF	2000	1549.245	77		26-152	0.54	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1360.346	68		26-123	0.53	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1702.232	85		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1456.253	73		28-136	0.54	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1332.030	67		28-143	0.46	1.046
13C-1,2,3,4,7,8,9-HpCDF	2000	1566.301	78		26-138	0.46	1.083
37Cl-2,3,7,8-TCDD	800	574.225	72		35-197	NA	1.030

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: 08/17/18 12:55
Date Received: 08/21/18 08:58

Sample Name: EV18080100-07
Lab Code: E1800770-001

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	0.294	0.125	0.677	1	1	0.294
1,2,3,7,8-PeCDD	1.40	0.0641	3.38	1	1	1.40
1,2,3,4,7,8-HxCDD	1.58	0.104	3.38	1	0.1	0.158
1,2,3,6,7,8-HxCDD	14.4	0.115	3.38	1	0.1	1.44
1,2,3,7,8,9-HxCDD	4.04	0.101	3.38	1	0.1	0.404
1,2,3,4,6,7,8-HpCDD	126	0.124	3.38	1	0.01	1.26
OCDD	589	0.234	6.77	1	0.0003	0.177
2,3,7,8-TCDF	0.808	0.0695	0.677	1	0.1	0.0808
1,2,3,7,8-PeCDF	0.704	0.118	3.38	1	0.03	0.0211
2,3,4,7,8-PeCDF	2.01	0.120	3.38	1	0.3	0.603
1,2,3,4,7,8-HxCDF	3.72	0.196	3.38	1	0.1	0.372
1,2,3,6,7,8-HxCDF	3.94	0.201	3.38	1	0.1	0.394
1,2,3,7,8,9-HxCDF	0.988	0.210	3.38	1	0.1	0.0988
2,3,4,6,7,8-HxCDF	8.89	0.201	3.38	1	0.1	0.889
1,2,3,4,6,7,8-HpCDF	294	0.366	3.38	1	0.01	2.94
1,2,3,4,7,8,9-HpCDF	6.41	0.402	3.38	1	0.01	0.0641
OCDF	669	0.0762	6.77	1	0.0003	0.201
Total TEQ						10.8

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Sample Name: EV18080100-07
Lab Code: E1800770-001

Service Request: E1800770
Date Collected: 08/17/18 12:55
Date Received: 08/21/18 08:58

Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
6.944g

Date Analyzed: 08/30/18 10:46
NA
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	68.7		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: 08/17/18 13:05
Date Received: 08/21/18 08:58

Sample Name: EV18080100-08
Lab Code: E1800770-002

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.596g

Data File Name: P614376
ICAL Date: 03/29/18

Date Analyzed: 08/31/18 04:37
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	0.323JK		0.166	0.648	0.60	1.001	1
1,2,3,7,8-PeCDD	ND	U	0.0599	3.24			1
1,2,3,4,7,8-HxCDD	ND	U	0.0445	3.24			1
1,2,3,6,7,8-HxCDD	0.0939JK		0.0493	3.24	0.73	1.000	1
1,2,3,7,8,9-HxCDD	0.0859JK		0.0431	3.24	0.84	1.008	1
1,2,3,4,6,7,8-HpCDD	3.06J		0.0608	3.24	1.06	1.001	1
OCDD	44.9		0.130	6.48	0.93	1.000	1
2,3,7,8-TCDF	0.593J		0.0423	0.648	0.77	1.001	1
1,2,3,7,8-PeCDF	0.0806JK		0.0479	3.24	1.05	1.001	1
2,3,4,7,8-PeCDF	ND	U	0.0480	3.24			1
1,2,3,4,7,8-HxCDF	0.166JK		0.0310	3.24	1.60	1.000	1
1,2,3,6,7,8-HxCDF	0.0856JK		0.0349	3.24	1.49	1.000	1
1,2,3,7,8,9-HxCDF	0.0980JK		0.0335	3.24	1.52	1.000	1
2,3,4,6,7,8-HxCDF	0.0640J		0.0300	3.24	1.10	1.000	1
1,2,3,4,6,7,8-HpCDF	0.759J		0.0360	3.24	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	0.110JK		0.0402	3.24	1.42	1.000	1
OCDF	7.13		0.108	6.48	0.92	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: 08/17/18 13:05
Date Received: 08/21/18 08:58

Sample Name: EV18080100-08
Lab Code: E1800770-002

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.596g

Data File Name: P614376
ICAL Date: 03/29/18

Date Analyzed: 08/31/18 04:37
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	1.13		0.166	0.648	0.79		1
Total Penta-Dioxins	ND	U	0.0599	3.24			1
Total Hexa-Dioxins	0.925J		0.0456	3.24	1.29		1
Total Hepta-Dioxins	6.99		0.0608	3.24	1.07		1
Total Tetra-Furans	0.679		0.0423	0.648	0.70		1
Total Penta-Furans	ND	U	0.0479	3.24			1
Total Hexa-Furans	1.21J		0.0323	3.24	1.14		1
Total Hepta-Furans	0.759J		0.0379	3.24	1.02		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: 08/17/18 13:05
Date Received: 08/21/18 08:58

Sample Name: EV18080100-08
Lab Code: E1800770-002

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.596g

Date Analyzed: 08/31/18 04:37
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Data File Name: P614376
ICAL Date: 03/29/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	683.335	34		25-164	0.78	1.030
13C-1,2,3,7,8-PeCDD	2000	991.517	50		25-181	1.57	1.246
13C-1,2,3,4,7,8-HxCDD	2000	1144.676	57		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1018.464	51		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1100.406	55		23-140	1.09	1.071
13C-OCDD	4000	1350.696	34		17-157	0.92	1.141
13C-2,3,7,8-TCDF	2000	899.459	45		24-169	0.78	0.988
13C-1,2,3,7,8-PeCDF	2000	1137.501	57		24-185	1.60	1.192
13C-2,3,4,7,8-PeCDF	2000	1051.085	53		21-178	1.59	1.233
13C-1,2,3,4,7,8-HxCDF	2000	1252.542	63		26-152	0.55	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1018.803	51		26-123	0.53	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1354.034	68		29-147	0.54	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1203.505	60		28-136	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1108.054	55		28-143	0.46	1.046
13C-1,2,3,4,7,8,9-HpCDF	2000	1294.871	65		26-138	0.46	1.083
37Cl-2,3,7,8-TCDD	800	419.459	52		35-197	NA	1.030

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: 08/17/18 13:05
Date Received: 08/21/18 08:58

Sample Name: EV18080100-08
Lab Code: E1800770-002

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	0.323	0.166	0.648	1	1	0.323
1,2,3,7,8-PeCDD	ND	0.0599	3.24	1	1	
1,2,3,4,7,8-HxCDD	ND	0.0445	3.24	1	0.1	
1,2,3,6,7,8-HxCDD	0.0939	0.0493	3.24	1	0.1	0.00939
1,2,3,7,8,9-HxCDD	0.0859	0.0431	3.24	1	0.1	0.00859
1,2,3,4,6,7,8-HpCDD	3.06	0.0608	3.24	1	0.01	0.0306
OCDD	44.9	0.130	6.48	1	0.0003	0.0135
2,3,7,8-TCDF	0.593	0.0423	0.648	1	0.1	0.0593
1,2,3,7,8-PeCDF	0.0806	0.0479	3.24	1	0.03	0.00242
2,3,4,7,8-PeCDF	ND	0.0480	3.24	1	0.3	
1,2,3,4,7,8-HxCDF	0.166	0.0310	3.24	1	0.1	0.0166
1,2,3,6,7,8-HxCDF	0.0856	0.0349	3.24	1	0.1	0.00856
1,2,3,7,8,9-HxCDF	0.0980	0.0335	3.24	1	0.1	0.00980
2,3,4,6,7,8-HxCDF	0.0640	0.0300	3.24	1	0.1	0.00640
1,2,3,4,6,7,8-HpCDF	0.759	0.0360	3.24	1	0.01	0.00759
1,2,3,4,7,8,9-HpCDF	0.110	0.0402	3.24	1	0.01	0.00110
OCDF	7.13	0.108	6.48	1	0.0003	0.00214
Total TEQ						0.499

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Sample Name: EV18080100-08
Lab Code: E1800770-002

Service Request: E1800770
Date Collected: 08/17/18 13:05
Date Received: 08/21/18 08:58

Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
5.88g

Date Analyzed: 08/30/18 10:46
NA
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	72.8		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ1800346-01

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.213g

Date Analyzed: 08/31/18 00:31
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Data File Name: P614371
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.135	0.490			1
1,2,3,7,8-PeCDD	ND	U	0.0371	2.45			1
1,2,3,4,7,8-HxCDD	ND	U	0.0219	2.45			1
1,2,3,6,7,8-HxCDD	ND	U	0.0242	2.45			1
1,2,3,7,8,9-HxCDD	ND	U	0.0211	2.45			1
1,2,3,4,6,7,8-HpCDD	0.104J		0.0215	2.45	1.02	1.000	1
OCDD	0.522JK		0.0930	4.90	1.29	1.000	1
2,3,7,8-TCDF	ND	U	0.0525	0.490			1
1,2,3,7,8-PeCDF	ND	U	0.0246	2.45			1
2,3,4,7,8-PeCDF	ND	U	0.0254	2.45			1
1,2,3,4,7,8-HxCDF	ND	U	0.0167	2.45			1
1,2,3,6,7,8-HxCDF	ND	U	0.0153	2.45			1
1,2,3,7,8,9-HxCDF	ND	U	0.0194	2.45			1
2,3,4,6,7,8-HxCDF	ND	U	0.0164	2.45			1
1,2,3,4,6,7,8-HpCDF	0.0361J		0.0187	2.45	0.95	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0232	2.45			1
OCDF	0.203JK		0.0860	4.90	0.73	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ1800346-01

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.213g

Data File Name: P614371
ICAL Date: 03/29/18

Date Analyzed: 08/31/18 00:31
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.135	0.490			1
Total Penta-Dioxins	ND	U	0.0371	2.45			1
Total Hexa-Dioxins	ND	U	0.0223	2.45			1
Total Hepta-Dioxins	0.248J		0.0215	2.45	0.95		1
Total Tetra-Furans	ND	U	0.0525	0.490			1
Total Penta-Furans	ND	U	0.0250	2.45			1
Total Hexa-Furans	ND	U	0.0169	2.45			1
Total Hepta-Furans	0.0533J		0.0206	2.45	0.95		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ1800346-01

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.213g

Date Analyzed: 08/31/18 00:31
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Data File Name: P614371
ICAL Date: 03/29/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	801.114	40		25-164	0.78	1.030
13C-1,2,3,7,8-PeCDD	2000	1120.956	56		25-181	1.57	1.247
13C-1,2,3,4,7,8-HxCDD	2000	1287.564	64		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1077.807	54		28-130	1.25	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1218.386	61		23-140	1.08	1.071
13C-OCDD	4000	1454.995	36		17-157	0.92	1.141
13C-2,3,7,8-TCDF	2000	1059.217	53		24-169	0.79	0.988
13C-1,2,3,7,8-PeCDF	2000	1306.856	65		24-185	1.60	1.193
13C-2,3,4,7,8-PeCDF	2000	1189.104	59		21-178	1.59	1.234
13C-1,2,3,4,7,8-HxCDF	2000	1414.797	71		26-152	0.53	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1288.655	64		26-123	0.53	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1368.791	68		29-147	0.54	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1309.666	65		28-136	0.54	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1219.753	61		28-143	0.46	1.046
13C-1,2,3,4,7,8,9-HpCDF	2000	1305.279	65		26-138	0.46	1.083
37Cl-2,3,7,8-TCDD	800	457.839	57		35-197	NA	1.031



Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Analyzed: 08/31/18
Date Extracted: 08/28/18

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Units: ng/Kg
Basis: Dry
Analysis Lot: 604995

Lab Control Sample
EQ1800346-02

Duplicate Lab Control Sample
EQ1800346-03

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1,2,3,4,6,7,8-HpCDD	89.5	99.4	90	87.3	97.2	90	70-140	2	50
1,2,3,4,7,8-HxCDD	114	99.4	115	102	97.2	105	70-164	11	50
1,2,3,6,7,8-HxCDD	111	99.4	111	109	97.2	112	76-134	2	50
1,2,3,7,8,9-HxCDD	115	99.4	116	93.9	97.2	97	64-162	20	50
1,2,3,7,8-PeCDD	107	99.4	108	106	97.2	109	70-142	1	50
2,3,7,8-TCDD	26.9	19.9	136	26.9	19.4	138	67-158	<1	50
OCDD	208	199	105	206	194	106	78-144	1	50
1,2,3,4,6,7,8-HpCDF	103	99.4	104	103	97.2	106	82-122	<1	50
1,2,3,4,7,8,9-HpCDF	108	99.4	109	106	97.2	109	78-138	2	50
1,2,3,4,7,8-HxCDF	106	99.4	107	107	97.2	110	72-134	<1	50
1,2,3,6,7,8-HxCDF	104	99.4	105	104	97.2	107	84-130	<1	50
1,2,3,7,8,9-HxCDF	103	99.4	104	103	97.2	106	78-130	<1	50
1,2,3,7,8-PeCDF	99.8	99.4	100	99.3	97.2	102	80-134	<1	50
2,3,4,6,7,8-HxCDF	105	99.4	106	106	97.2	109	70-156	<1	50
2,3,4,7,8-PeCDF	109	99.4	110	109	97.2	112	68-160	<1	50
2,3,7,8-TCDF	19.3	19.9	97	19.2	19.4	99	75-158	<1	50
OCDF	259	199	130	273	194	140	63-170	5	50

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ1800346-02

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.064g

Date Analyzed: 08/31/18 05:26
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Data File Name: P614377
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	26.9		0.0885	0.497	0.78	1.001	1
1,2,3,7,8-PeCDD	107		0.0321	2.48	1.55	1.001	1
1,2,3,4,7,8-HxCDD	114		0.0268	2.48	1.24	1.000	1
1,2,3,6,7,8-HxCDD	111		0.0193	2.48	1.28	1.000	1
1,2,3,7,8,9-HxCDD	115		0.0208	2.48	1.25	1.007	1
1,2,3,4,6,7,8-HpCDD	89.5		0.0205	2.48	1.06	1.000	1
OCDD	208		0.141	4.97	0.90	1.000	1
2,3,7,8-TCDF	19.3		0.0296	0.497	0.79	1.001	1
1,2,3,7,8-PeCDF	99.8		0.0240	2.48	1.60	1.000	1
2,3,4,7,8-PeCDF	109		0.0251	2.48	1.59	1.001	1
1,2,3,4,7,8-HxCDF	106		0.0270	2.48	1.26	1.000	1
1,2,3,6,7,8-HxCDF	104		0.0256	2.48	1.26	1.000	1
1,2,3,7,8,9-HxCDF	103		0.0305	2.48	1.27	1.000	1
2,3,4,6,7,8-HxCDF	105		0.0263	2.48	1.25	1.000	1
1,2,3,4,6,7,8-HpCDF	103		0.0913	2.48	1.06	1.000	1
1,2,3,4,7,8,9-HpCDF	108		0.115	2.48	1.07	1.000	1
OCDF	259		0.258	4.97	0.91	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ1800346-02

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.064g

Date Analyzed: 08/31/18 05:26
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Data File Name: P614377
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	26.9		0.0885	0.497	0.78		1
Total Penta-Dioxins	107		0.0321	2.48	1.55		1
Total Hexa-Dioxins	340		0.0220	2.48	1.24		1
Total Hepta-Dioxins	89.5		0.0205	2.48	1.06		1
Total Tetra-Furans	19.5		0.0296	0.497	0.87		1
Total Penta-Furans	211		0.0246	2.48	1.68		1
Total Hexa-Furans	418		0.0272	2.48	1.26		1
Total Hepta-Furans	211		0.102	2.48	1.06		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ1800346-02

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.064g

Date Analyzed: 08/31/18 05:26
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Data File Name: P614377
ICAL Date: 03/29/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	933.509	47		25-164	0.78	1.030
13C-1,2,3,7,8-PeCDD	2000	1204.542	60		25-181	1.57	1.247
13C-1,2,3,4,7,8-HxCDD	2000	1054.539	53		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1174.258	59		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1362.388	68		23-140	1.07	1.071
13C-OCDD	4000	1673.722	42		17-157	0.92	1.141
13C-2,3,7,8-TCDF	2000	1271.012	64		24-169	0.79	0.988
13C-1,2,3,7,8-PeCDF	2000	1450.338	73		24-185	1.59	1.193
13C-2,3,4,7,8-PeCDF	2000	1298.481	65		21-178	1.61	1.234
13C-1,2,3,4,7,8-HxCDF	2000	1548.648	77		26-152	0.53	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1423.211	71		26-123	0.53	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1545.852	77		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1491.931	75		28-136	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1350.527	68		28-143	0.46	1.046
13C-1,2,3,4,7,8,9-HpCDF	2000	1456.496	73		26-138	0.46	1.083
37Cl-2,3,7,8-TCDD	800	533.818	67		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ1800346-03

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.283g

Date Analyzed: 08/31/18 06:16
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Data File Name: P614378
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	26.9		0.134	0.486	0.77	1.001	1
1,2,3,7,8-PeCDD	106		0.0366	2.43	1.56	1.001	1
1,2,3,4,7,8-HxCDD	102		0.0223	2.43	1.28	1.000	1
1,2,3,6,7,8-HxCDD	109		0.0251	2.43	1.29	1.001	1
1,2,3,7,8,9-HxCDD	93.9		0.0217	2.43	1.27	1.008	1
1,2,3,4,6,7,8-HpCDD	87.3		0.0304	2.43	1.09	1.000	1
OCDD	206		0.216	4.86	0.91	1.000	1
2,3,7,8-TCDF	19.2		0.0477	0.486	0.79	1.001	1
1,2,3,7,8-PeCDF	99.3		0.0224	2.43	1.58	1.001	1
2,3,4,7,8-PeCDF	109		0.0228	2.43	1.58	1.001	1
1,2,3,4,7,8-HxCDF	107		0.0232	2.43	1.25	1.000	1
1,2,3,6,7,8-HxCDF	104		0.0224	2.43	1.26	1.000	1
1,2,3,7,8,9-HxCDF	103		0.0315	2.43	1.28	1.000	1
2,3,4,6,7,8-HxCDF	106		0.0244	2.43	1.25	1.000	1
1,2,3,4,6,7,8-HpCDF	103		0.108	2.43	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	106		0.134	2.43	1.04	1.000	1
OCDF	273		0.0840	4.86	0.92	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ1800346-03

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.283g

Date Analyzed: 08/31/18 06:16
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Data File Name: P614378
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	26.9		0.134	0.486	0.77		1
Total Penta-Dioxins	106		0.0366	2.43	1.56		1
Total Hexa-Dioxins	305		0.0230	2.43	1.28		1
Total Hepta-Dioxins	87.3		0.0304	2.43	1.09		1
Total Tetra-Furans	19.7		0.0477	0.486	0.75		1
Total Penta-Furans	210		0.0226	2.43	1.57		1
Total Hexa-Furans	420		0.0249	2.43	1.25		1
Total Hepta-Furans	209		0.119	2.43	1.05		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800770
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ1800346-03

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.283g

Date Analyzed: 08/31/18 06:16
Date Extracted: 8/28/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614371
Cal Ver. File Name: P614368

Data File Name: P614378
ICAL Date: 03/29/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	736.042	37		25-164	0.80	1.030
13C-1,2,3,7,8-PeCDD	2000	1040.857	52		25-181	1.58	1.246
13C-1,2,3,4,7,8-HxCDD	2000	1166.940	58		32-141	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1042.527	52		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1098.275	55		23-140	1.06	1.072
13C-OCDD	4000	1115.351	28		17-157	0.91	1.141
13C-2,3,7,8-TCDF	2000	1026.925	51		24-169	0.79	0.988
13C-1,2,3,7,8-PeCDF	2000	1210.293	61		24-185	1.60	1.192
13C-2,3,4,7,8-PeCDF	2000	1108.816	55		21-178	1.59	1.234
13C-1,2,3,4,7,8-HxCDF	2000	1342.117	67		26-152	0.53	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1238.835	62		26-123	0.54	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1167.654	58		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1221.330	61		28-136	0.54	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1099.595	55		28-143	0.46	1.046
13C-1,2,3,4,7,8,9-HpCDF	2000	1151.933	58		26-138	0.45	1.083
37Cl-2,3,7,8-TCDD	800	427.768	53		35-197	NA	1.031



September 13, 2018

Service Request No:E1800806

Rick Bagan
ALS Environmental
8620 Holly Drive #100
Everett, WA 98208

Laboratory Results for: EV18080100

Dear Rick,

Enclosed are the results of the sample(s) submitted to our laboratory September 04, 2018
For your reference, these analyses have been assigned our service request number **E1800806**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My direct line is 281-575-2146. You may also contact me via email at Corey.Grandits@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099

PHONE +1 281 530 5656 | FAX +1 281 561 6125

ALS Group USA, Corp.

dba ALS Environmental



Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request No.: E1800806
Date Received: 09/04/18

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One soil sample was received for analysis at ALS Environmental in Houston on 09/04/18.

The sample was received at 23.5°C in good condition and is consistent with the accompanying chain of custody form. Dioxin/furan compounds are stable at room temperature. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ1800356: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within control limits.

B flags – Method Blanks

The Method Blank EQ1800356-01 contained low levels of select target compounds above the EDL however below the Method Reporting Limit (MRL).

The associated compounds in the samples are flagged with 'B' flags where the sample result is less than ten times the level detected in the method blank.

Y flag – Cleanup Standard

The recovery for the cleanup standard, 37Cl-2,3,7,8-TCDD is below control limits in the Method Blank. The sample results are not affected since this labeled standard is provided as a means of demonstrating that both the sample extraction and subsequent cleanup steps performed as expected, and is not used in quantitation of target analytes.

Y flags – Labeled Standards

Select labeled standards recovered below control limits in the Method Blank.

Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with 'Y' flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1 and detection limits were below the Method Reporting Limits.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- 2378-TCDF from the DB-225 column, when confirmation required
- Non-detected compounds are not included in the 'Total'

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - Everett
Project: EV18080100

Service Request:E1800806

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E1800806-001	EV18080100-01 B6-3	8/17/2018	0805

Service Request Summary

Folder #: E1800806
Client Name: ALS Environmental - Everett
Project Name: EV18080100
Project Number:

Report To: Rick Bagan
 ALS Environmental
 8620 Holly Drive #100
 Everett, WA 98208
 USA
Phone Number: 425-356-2600
Cell Number:
Fax Number:
E-mail: rick.bagan@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: ALOPEZ
Date Received: 09/04/18
Internal Due Date: 9/14/2018
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N, Y
Report to MDL?: Y
P.O. Number: EV18080100
EDD: No EDD Specified

1 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
 1 -N/A N/A
Location: EHRMS-WIC 9B, SMO
Pressure Gas:

				HOUSTON	
Lab Samp No.	Client Samp No	Matrix	Collected	Dioxins Furans/1613B	Total Solids/ALS SOP
E1800806-001	EV18080100-01	Soil	08/17/18 0805	II	II

Service Request Summary

Folder #: E1800806
Client Name: ALS Environmental - Everett
Project Name: EV18080100
Project Number:

Report To: Rick Bagan
ALS Environmental
8620 Holly Drive #100
Everett, WA 98208
USA
Phone Number: 425-356-2600
Cell Number:
Fax Number:
E-mail: rick.bagan@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: ALOPEZ
Date Received: 09/04/18
Internal Due Date: 9/14/2018
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N, Y
Report to MDL?: Y
P.O. Number: EV18080100
EDD: No EDD Specified

1 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
1 -N/A N/A
Location: EHRMS-WIC 9B, SMO
Pressure Gas:

Data Qualifiers

HRMS Qualifier Set

- B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
- E Estimated value. The reported concentration is above the calibration range of the instrument.
- H Sample extracted and/or analyzed out of suggested holding time.
- J Estimated value. The reported concentration is below the MRL.
- K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits. The concentration of this analyte should be considered as an estimate.
- P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
- Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
- S Signal saturated detector. Result reported from dilution.
- U Compound was analyzed for, but was not detected (ND).
- X See Case Narrative.
- Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-noise ratios are greater than 10:1, making the recoveries acceptable.
 - i The MDL/MRL have been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCetration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01	11/30/2019
Arizona Department of Health Services	AZ0793	5/27/2019
Arkansas Department of Environmental Quality	17-027-0	3/27/2019
California Department of Health Services	2452	4/30/2019
Florida Department of Health	E87611	7/31/2019
Illinois Environmental Protection Agency	004112	5/29/2019
Kansas Department of Health and Environment	E-10406	7/31/2019
Louisiana Department of Environmental Quality	03048	6/30/2019
Louisiana Department of Health and Hospitals	LA150026	12/31/2018
Maine Center for Disease Control and Prevention	2014019	6/5/2020
Minnesota Department of Health	840911	12/31/2018
New Jersey Department of Environmental Protection	NLC140001	6/30/2019
New York Department of Health	11707	4/1/2019
Oklahoma Department of Environmental Quality	2014 124	8/31/2019
Pennsylvania Department of Environmental Protection	68-03441	6/30/2019
Tennessee Department of Environment and Conservation	04016	6/30/2019
Texas Commission on Environmental Quality	TX104704231-17-18	4/30/2019
Utah Department of Health Environmental Laboratory Certification	TX02694	7/3/2019
Washington Department of Health	c819	11/14/2018
West Virginia Department of Environmental Protection	347	6/30/2019

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E1800806

DB-5MSUI

SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
09/13/18	LKL	001

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
9/13/18	LG	001



Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com



ALS Environmental
 8620 Holly Drive, Suite 100
 Everett, WA 98208
 Phone (425) 356-2600
 Fax (425) 356-2626
 http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

Date 8/31/18 Page 1 Of 1

PROJECT ID: <u>EV18080100</u>					ANALYSIS REQUESTED										OTHER (Specify)																	
REPORT TO COMPANY: <u>ALS Environmental</u>					NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021 ☐	BTX by EPA 8260 ☐	MTBE by EPA 8021 ☐	MTBE by EPA 8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 ☐	Pesticides by EPA 8081 ☐	Metals-MTCA-5 ☐	PCRA-8 ☐	Pri Pol ☐	TAL ☐	Metals Other (Specify)	TCLP-Metals ☐	VOA ☐	Semi-Vol ☐	Pest ☐	Herbs ☐	EPA - <u>Dioxins/Furans by 1613</u>	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
PROJECT MANAGER: <u>Rick Bagan</u>																																
ADDRESS: <u>8620 Holly Drive #100</u>																																
<u>Everett WA 98208</u>																																
PHONE: <u>(425) 356-2600</u> P.O. #: <u>32-EV18080100-1</u>																																
E-MAIL: <u>rick.bagan@alsglobal.com</u>																																
INVOICE TO COMPANY:																																
ATTENTION: <u>Same</u>																																
ADDRESS:																																
SAMPLE I.D.	DATE	TIME	TYPE	LAB#																												
1. <u>EV18080100-01</u>	<u>8/17/18</u>	<u>0805</u>	<u>S</u>																													
2.																																
3.																																
4.																																
5.																																
6.																																
7.																																
8.																																
9.																																
10.																																



SPECIAL INSTRUCTIONS Please email results by noon 9/11/18 or AS SOON AS POSSIBLE RUSH PLEASE Thank you. (ALS National Contract for Terracon)

SIGNATURES (Name, Company, Date, Time):
 1. Relinquished By: Shawn Robinson ALS 8/31/18 2:45pm
 Received By: ALS 9/4/18 11:10
 2. Relinquished By: E1800806
 Received By: _____

TURNAROUND REQUESTED in Business Days*
 Organic, Metals & Inorganic Analysis
 Standard 10 5 3 2 1 SAME DAY
 Fuels & Hydrocarbon Analysis
 Standard 5 3 1 SAME DAY
 OTHER: _____
 Specify: _____

*Turnaround request less than standard may incur Rush Charges

Cooler Receipt Form

Project Chemist NB

Client/Project ALS Environmental

Thermometer ID SMO 4

Date/Time Received: 9/4/18 11:10

Initials: AL

Date/Time Logged in: 9/4/18 Initials AL

1. Method of delivery: ☐ US Mail ☒ Fed Ex ☐ UPS ☐ DHL ☐ Courier ☐ Client

2. Samples received in: ☒ Cooler ☐ Box ☐ Envelope ☐ Other

3. Were custody seals on coolers? ☐ Yes ☒ No

If yes, how many and where?

No Seals

Were they intact? ☐ Yes ☐ No ENT/A

Were they signed and dated? ☐ Yes ☐ No ENT/A

4. Packing Material: ☐ Inserts ☐ Baggies ☐ Bubble Wrap ☒ Gel Packs ☐ Wet Ice ☐ Sleeves ☒ Other Packing Paper

5. Foreign or Regulated Soil? ☐ Yes ☒ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
8133 8630 1857		9/4/18	11:30	AL	23.1/23.5	☐
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☒ Yes ☐ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☒ Yes ☐ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☒ Yes ☐ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ☒ Yes ☐ No

10. Did sample labels and tags agree with custody documents? ☒ Yes ☐ No

Notes, Discrepancies, & Resolutions:

Service request Label:

E1800806
ALS Environmental
Dioxin

5




10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 321237
Team: Semivoa GCMS/ALOPEZ

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 9/5/18 11:00 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1800790-003	SD1808301130JTM	.01	1613B/Dioxins Furans			Sediment	10.172g	Black Mud
2	E1800804-001	18-08018	.01	1613B/Dioxins Furans			Solid	10.468g	Brown Sand + Rocks
3	E1800804-002	18-08019	.01	1613B/Dioxins Furans			Solid	10.852g	Brown Sand + Rocks
4	E1800806-001	EV18080100-01	.01	1613B/Dioxins Furans			Soil	10.020g	Brown Mud
5	E1800807-001	HS18090008-01	.01	1613B/Dioxins Furans			Soil	10.820g	Black Dirt
6	E1800807-002	HS18090008-02	.01	1613B/Dioxins Furans			Soil	10.345g	Black Dirt
7	E1800807-003	HS18090008-03	.01	1613B/Dioxins Furans			Soil	10.599g	Brown Dirt
8	E1800807-004	HS18090008-04	.01	1613B/Dioxins Furans			Soil	10.099g	Black Dirt
9	EQ1800356-01	MB		1613B/Dioxins Furans			Solid	10.438g	
10	EQ1800356-02	LCS		1613B/Dioxins Furans			Solid	10.061g	
11	EQ1800356-03	DLCS		1613B/Dioxins Furans			Solid	10.185g	
12	J1806201-007	72126 8-01-2018 23:21	.03	1613B/Dioxins Furans			Solid	10.684g	Brown + White Cardboard
13	K1808066-001	Clarifier solids, screw press	.01	1613B/Dioxins Furans			Soil	10.167g	Brown Paper Pulp

Spiking Solutions

Name:	1613B Labeled Working Standard	Inventory ID	192472	Logbook Ref:	192471 2-4NGML JG 8/15/18	Expires On:	01/09/2019
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E1800790-003	1,000.00µL	E1800804-001	1,000.00µL	E1800804-002	1,000.00µL	E1800806-001	1,000.00µL	E1800807-001	1,000.00µL	E1800807-002	1,000.00µL
E1800807-003	1,000.00µL	E1800807-004	1,000.00µL	EQ1800356-01	1,000.00µL	EQ1800356-02	1,000.00µL	EQ1800356-03	1,000.00µL	J1806201-007	1,000.00µL
K1808066-001	1,000.00µL										

Name:	1613B Labeled Working Standard	Inventory ID	192719	Logbook Ref:	192719 JG 8/27/18 2-4ngml	Expires On:	01/09/2019
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E1800807-001	1,000.00µL	E1800807-002	1,000.00µL	E1800807-003	1,000.00µL	E1800807-004	1,000.00µL
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Name:	1613B Matrix Working Standard	Inventory ID	192792	Logbook Ref:	192792 AL 8/29/18 2-20 ng/mL	Expires On:	02/25/2019
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EQ1800356-02	100.00µL	EQ1800356-03	100.00µL
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Name:	8290/1613B Cleanup Working Standard	Inventory ID	192951	Logbook Ref:	192951 tw 090618 8ng/ml	Expires On:	10/27/2018
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E1800790-003	100.00µL	E1800804-001	100.00µL	E1800804-002	100.00µL	E1800806-001	100.00µL	E1800807-001	100.00µL	E1800807-002	100.00µL
E1800807-003	100.00µL	E1800807-004	100.00µL	EQ1800356-01	100.00µL	EQ1800356-02	100.00µL	EQ1800356-03	100.00µL	J1806201-007	100.00µL
K1808066-001	100.00µL										

E1800806

Preparation Information Benchsheet

Prep Run#: 321237
Team: Semivoa GCMS/ALOPEZ

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 9/5/18 11:00 AM

Preparation Materials

Carbon, High Purity	AL 8/10/18 (192392)	Ethyl Acetate 99.9% Minimum EtOAc	tw ethyl acet 080218 (192158)	Glass Wool	AL 8/20/18 (192604)
Hexanes 95%	AL 9/4/18 (192875)	Dichloromethane (Methylene Chloride) 99.9% MeCl ₂	AL 9/5/18 (192924)	Sodium Chloride Reagent Grade NaCl	AL 3/23/18 (188853)
Sodium Sulfate Anhydrous Reagent Grade Na ₂ SO ₄	AL 7/30/18 (192040)	Tridecane (n-Tridecane)	AL 7/30/18 (192037)	Silica Gel	AL 7/30/18 (192039)
Toluene 99.9% Minimum	AL 9/4/18 (192874)	sulfuric acid	SULFURIC ACID (190871)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)

Preparation Steps

Step: Extraction	Step: Acid Clean	Step: Silica Gel Clean	Step: Final Volume
Started: 9/5/18 11:00	Started: 9/10/18 08:00	Started: 9/10/18 10:00	Started: 9/11/18 11:00
Finished: 9/6/18 07:00	Finished: 9/10/18 09:00	Finished: 9/10/18 13:00	Finished: 9/11/18 14:00
By: ALOPEZ	By: ALOPEZ	By: ALOPEZ	By: ALOPEZ
Comments	Comments	Comments	Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____	Date: _____	<u>Extracts Examined</u>
Received By: _____	Date: _____	Yes No

E1800806

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Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: 08/17/18 08:05
Date Received: 09/04/18 11:10

Sample Name: EV18080100-01
Lab Code: E1800806-001

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.020g

Data File Name: P517584
ICAL Date: 01/24/18

Date Analyzed: 09/11/18 21:38
Date Extracted: 9/5/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614520
Cal Ver. File Name: P517575

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.214	0.753			1
1,2,3,7,8-PeCDD	0.271 JK		0.0961	3.76	0.91	1.001	1
1,2,3,4,7,8-HxCDD	ND	U	0.180	3.76			1
1,2,3,6,7,8-HxCDD	ND	U	0.189	3.76			1
1,2,3,7,8,9-HxCDD	ND	U	0.180	3.76			1
1,2,3,4,6,7,8-HpCDD	2.61 J		0.0454	3.76	1.08	1.000	1
OCDD	31.8		0.152	7.53	0.87	1.000	1
2,3,7,8-TCDF	0.499 JK		0.122	0.753	0.59	1.001	1
1,2,3,7,8-PeCDF	0.264 J		0.152	3.76	1.73	1.000	1
2,3,4,7,8-PeCDF	0.811 J		0.151	3.76	1.37	1.002	1
1,2,3,4,7,8-HxCDF	0.243 BJ		0.0446	3.76	1.06	1.000	1
1,2,3,6,7,8-HxCDF	0.281 BJ		0.0395	3.76	1.12	1.000	1
1,2,3,7,8,9-HxCDF	0.150 BJ		0.0434	3.76	1.19	1.001	1
2,3,4,6,7,8-HxCDF	0.380 BJ		0.0401	3.76	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	0.492 BJ		0.0640	3.76	0.96	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0791	3.76			1
OCDF	0.867 BJK		0.158	7.53	1.23	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: 08/17/18 08:05
Date Received: 09/04/18 11:10

Sample Name: EV18080100-01
Lab Code: E1800806-001

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.020g

Date Analyzed: 09/11/18 21:38
Date Extracted: 9/5/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614520
Cal Ver. File Name: P517575

Data File Name: P517584
ICAL Date: 01/24/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	10.4		0.214	0.753	0.75		1
Total Penta-Dioxins	4.72		0.0961	3.76	1.39		1
Total Hexa-Dioxins	1.27J		0.183	3.76	1.26		1
Total Hepta-Dioxins	5.88		0.0454	3.76	1.01		1
Total Tetra-Furans	10.2		0.122	0.753	0.69		1
Total Penta-Furans	6.56		0.151	3.76	1.47		1
Total Hexa-Furans	2.45J		0.0417	3.76	1.15		1
Total Hepta-Furans	0.930J		0.0709	3.76	0.96		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: 08/17/18 08:05
Date Received: 09/04/18 11:10

Sample Name: EV18080100-01
Lab Code: E1800806-001

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.020g

Date Analyzed: 09/11/18 21:38
Date Extracted: 9/5/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614520
Cal Ver. File Name: P517575

Data File Name: P517584
ICAL Date: 01/24/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	952.472	48		25-164	0.79	1.022
13C-1,2,3,7,8-PeCDD	2000	1637.607	82		25-181	1.58	1.194
13C-1,2,3,4,7,8-HxCDD	2000	1286.584	64		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1267.622	63		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1393.305	70		23-140	1.07	1.067
13C-OCDD	4000	1848.317	46		17-157	0.91	1.141
13C-2,3,7,8-TCDF	2000	1072.508	54		24-169	0.80	0.992
13C-1,2,3,7,8-PeCDF	2000	1364.889	68		24-185	1.58	1.150
13C-2,3,4,7,8-PeCDF	2000	1385.169	69		21-178	1.58	1.183
13C-1,2,3,4,7,8-HxCDF	2000	1042.712	52		26-152	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1091.914	55		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1253.840	63		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1154.827	58		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1111.512	56		28-143	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1206.004	60		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	574.340	72		35-197	NA	1.023

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: 08/17/18 08:05
Date Received: 09/04/18 11:10

Sample Name: EV18080100-01
Lab Code: E1800806-001

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.214	0.753	1	1	
1,2,3,7,8-PeCDD	0.271	0.0961	3.76	1	1	0.271
1,2,3,4,7,8-HxCDD	ND	0.180	3.76	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.189	3.76	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.180	3.76	1	0.1	
1,2,3,4,6,7,8-HpCDD	2.61	0.0454	3.76	1	0.01	0.0261
OCDD	31.8	0.152	7.53	1	0.0003	0.00954
2,3,7,8-TCDF	0.499	0.122	0.753	1	0.1	0.0499
1,2,3,7,8-PeCDF	0.264	0.152	3.76	1	0.03	0.00792
2,3,4,7,8-PeCDF	0.811	0.151	3.76	1	0.3	0.243
1,2,3,4,7,8-HxCDF	0.243	0.0446	3.76	1	0.1	0.0243
1,2,3,6,7,8-HxCDF	0.281	0.0395	3.76	1	0.1	0.0281
1,2,3,7,8,9-HxCDF	0.150	0.0434	3.76	1	0.1	0.0150
2,3,4,6,7,8-HxCDF	0.380	0.0401	3.76	1	0.1	0.0380
1,2,3,4,6,7,8-HpCDF	0.492	0.0640	3.76	1	0.01	0.00492
1,2,3,4,7,8,9-HpCDF	ND	0.0791	3.76	1	0.01	
OCDF	0.867	0.158	7.53	1	0.0003	0.000260
Total TEQ						0.718

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: 08/17/18 08:05
Date Received: 09/04/18 11:10

Sample Name: EV18080100-01
Lab Code: E1800806-001

Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
6.759g

Date Analyzed: 09/10/18 11:59
NA
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	66.3		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ1800356-01

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.438g

Date Analyzed: 09/12/18 06:29
Date Extracted: 9/5/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614520
Cal Ver. File Name: P614516

Data File Name: P614520
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.189	0.479			1
1,2,3,7,8-PeCDD	ND	U	0.140	2.40			1
1,2,3,4,7,8-HxCDD	0.0921JK		0.0484	2.40	1.54	1.000	1
1,2,3,6,7,8-HxCDD	0.111J		0.0526	2.40	1.29	1.000	1
1,2,3,7,8,9-HxCDD	ND	U	0.0463	2.40			1
1,2,3,4,6,7,8-HpCDD	0.0745JK		0.0252	2.40	0.68	1.000	1
OCDD	0.627J		0.124	4.79	0.86	1.000	1
2,3,7,8-TCDF	ND	U	0.103	0.479			1
1,2,3,7,8-PeCDF	ND	U	0.0795	2.40			1
2,3,4,7,8-PeCDF	ND	U	0.0810	2.40			1
1,2,3,4,7,8-HxCDF	0.0743JK		0.0243	2.40	1.93	1.000	1
1,2,3,6,7,8-HxCDF	0.0646JK		0.0239	2.40	0.81	1.000	1
1,2,3,7,8,9-HxCDF	0.0632JK		0.0275	2.40	2.07	1.000	1
2,3,4,6,7,8-HxCDF	0.0680J		0.0237	2.40	1.35	1.000	1
1,2,3,4,6,7,8-HpCDF	0.128JK		0.0466	2.40	0.77	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0548	2.40			1
OCDF	0.347JK		0.133	4.79	0.70	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ1800356-01

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.438g

Data File Name: P614520
ICAL Date: 03/29/18

Date Analyzed: 09/12/18 06:29
Date Extracted: 9/5/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614520
Cal Ver. File Name: P614516

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.189	0.479			1
Total Penta-Dioxins	ND	U	0.140	2.40			1
Total Hexa-Dioxins	0.111J		0.0490	2.40	1.29		1
Total Hepta-Dioxins	ND	U	0.0252	2.40			1
Total Tetra-Furans	ND	U	0.103	0.479			1
Total Penta-Furans	ND	U	0.0803	2.40			1
Total Hexa-Furans	0.0680J		0.0248	2.40	1.35		1
Total Hepta-Furans	ND	U	0.0503	2.40			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ1800356-01

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.438g

Date Analyzed: 09/12/18 06:29
Date Extracted: 9/5/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614520
Cal Ver. File Name: P614516

Data File Name: P614520
ICAL Date: 03/29/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	318.459	16	Y	25-164	0.80	1.018
13C-1,2,3,7,8-PeCDD	2000	512.934	26		25-181	1.58	1.164
13C-1,2,3,4,7,8-HxCDD	2000	596.338	30	Y	32-141	1.25	0.992
13C-1,2,3,6,7,8-HxCDD	2000	524.930	26	Y	28-130	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	586.797	29		23-140	1.07	1.066
13C-OCDD	4000	780.364	20		17-157	0.90	1.143
13C-2,3,7,8-TCDF	2000	382.702	19	Y	24-169	0.80	0.993
13C-1,2,3,7,8-PeCDF	2000	552.064	28		24-185	1.59	1.126
13C-2,3,4,7,8-PeCDF	2000	517.914	26		21-178	1.59	1.155
13C-1,2,3,4,7,8-HxCDF	2000	614.774	31		26-152	0.53	0.973
13C-1,2,3,6,7,8-HxCDF	2000	550.894	28		26-123	0.53	0.976
13C-1,2,3,7,8,9-HxCDF	2000	607.209	30		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	603.329	30		28-136	0.53	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	448.579	22	Y	28-143	0.45	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	545.036	27		26-138	0.46	1.079
37Cl-2,3,7,8-TCDD	800	178.913	22	Y	35-197	NA	1.018



Accuracy & Precision

ALS Environmental - Houston HRMS
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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Analyzed: 09/12/18
Date Extracted: 09/05/18

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Units: ng/Kg
Basis: Dry
Analysis Lot: 606581

Lab Control Sample
EQ1800356-02

Duplicate Lab Control Sample
EQ1800356-03

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1,2,3,4,6,7,8-HpCDD	84.1	99.4	85	83.6	98.2	85	70-140	<1	50
1,2,3,4,7,8-HxCDD	99.0	99.4	100	97.4	98.2	99	70-164	2	50
1,2,3,6,7,8-HxCDD	105	99.4	105	103	98.2	105	76-134	2	50
1,2,3,7,8,9-HxCDD	96.0	99.4	97	101	98.2	103	64-162	6	50
1,2,3,7,8-PeCDD	105	99.4	106	105	98.2	107	70-142	<1	50
2,3,7,8-TCDD	27.0	19.9	136	27.8	19.6	141	67-158	3	50
OCDD	196	199	99	199	196	101	78-144	1	50
1,2,3,4,6,7,8-HpCDF	106	99.4	107	103	98.2	104	82-122	3	50
1,2,3,4,7,8,9-HpCDF	103	99.4	104	104	98.2	105	78-138	<1	50
1,2,3,4,7,8-HxCDF	104	99.4	104	101	98.2	103	72-134	2	50
1,2,3,6,7,8-HxCDF	103	99.4	104	101	98.2	103	84-130	2	50
1,2,3,7,8,9-HxCDF	101	99.4	101	98.8	98.2	101	78-130	2	50
1,2,3,7,8-PeCDF	98.9	99.4	99	100	98.2	102	80-134	1	50
2,3,4,6,7,8-HxCDF	104	99.4	104	102	98.2	104	70-156	2	50
2,3,4,7,8-PeCDF	109	99.4	109	109	98.2	111	68-160	<1	50
2,3,7,8-TCDF	21.8	19.9	110	21.4	19.6	109	75-158	2	50
OCDF	254	199	128	260	196	133	63-170	2	50

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ1800356-02

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.061g

Date Analyzed: 09/12/18 13:02
Date Extracted: 9/5/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614520
Cal Ver. File Name: P614516

Data File Name: P614528
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	27.0		0.0887	0.497	0.80	1.001	1
1,2,3,7,8-PeCDD	105		0.0797	2.48	1.59	1.000	1
1,2,3,4,7,8-HxCDD	99.0		0.0215	2.48	1.27	1.000	1
1,2,3,6,7,8-HxCDD	105		0.0229	2.48	1.28	1.000	1
1,2,3,7,8,9-HxCDD	96.0		0.0203	2.48	1.29	1.007	1
1,2,3,4,6,7,8-HpCDD	84.1		0.0244	2.48	1.05	1.000	1
OCDD	196		0.118	4.97	0.89	1.000	1
2,3,7,8-TCDF	21.8		0.0405	0.497	0.77	1.001	1
1,2,3,7,8-PeCDF	98.9		0.0676	2.48	1.58	1.001	1
2,3,4,7,8-PeCDF	109		0.0727	2.48	1.56	1.000	1
1,2,3,4,7,8-HxCDF	104		0.0211	2.48	1.24	1.000	1
1,2,3,6,7,8-HxCDF	103		0.0213	2.48	1.24	1.000	1
1,2,3,7,8,9-HxCDF	101		0.0250	2.48	1.24	1.000	1
2,3,4,6,7,8-HxCDF	104		0.0226	2.48	1.24	1.000	1
1,2,3,4,6,7,8-HpCDF	106		0.0892	2.48	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	103		0.107	2.48	1.05	1.000	1
OCDF	254		0.118	4.97	0.91	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ1800356-02

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.061g

Date Analyzed: 09/12/18 13:02
Date Extracted: 9/5/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614520
Cal Ver. File Name: P614516

Data File Name: P614528
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	27.0		0.0887	0.497	0.80		1
Total Penta-Dioxins	105		0.0797	2.48	1.59		1
Total Hexa-Dioxins	300		0.0215	2.48	1.27		1
Total Hepta-Dioxins	84.1		0.0244	2.48	1.05		1
Total Tetra-Furans	23.2		0.0405	0.497	0.78		1
Total Penta-Furans	212		0.0701	2.48	1.55		1
Total Hexa-Furans	412		0.0224	2.48	1.23		1
Total Hepta-Furans	209		0.0972	2.48	1.05		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ1800356-02

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.061g

Date Analyzed: 09/12/18 13:02
Date Extracted: 9/5/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614520
Cal Ver. File Name: P614516

Data File Name: P614528
ICAL Date: 03/29/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	822.717	41		25-164	0.81	1.018
13C-1,2,3,7,8-PeCDD	2000	1150.049	58		25-181	1.57	1.164
13C-1,2,3,4,7,8-HxCDD	2000	1262.816	63		32-141	1.26	0.992
13C-1,2,3,6,7,8-HxCDD	2000	1105.996	55		28-130	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1222.032	61		23-140	1.08	1.066
13C-OCDD	4000	1569.768	39		17-157	0.92	1.143
13C-2,3,7,8-TCDF	2000	1062.097	53		24-169	0.79	0.993
13C-1,2,3,7,8-PeCDF	2000	1292.605	65		24-185	1.59	1.126
13C-2,3,4,7,8-PeCDF	2000	1160.395	58		21-178	1.59	1.155
13C-1,2,3,4,7,8-HxCDF	2000	1407.959	70		26-152	0.53	0.973
13C-1,2,3,6,7,8-HxCDF	2000	1245.900	62		26-123	0.53	0.976
13C-1,2,3,7,8,9-HxCDF	2000	1378.658	69		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1269.783	63		28-136	0.53	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1019.217	51		28-143	0.45	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	1219.998	61		26-138	0.46	1.079
37Cl-2,3,7,8-TCDD	800	487.389	61		35-197	NA	1.018

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ1800356-03

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.185g

Date Analyzed: 09/12/18 13:51
Date Extracted: 9/5/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614520
Cal Ver. File Name: P614516

Data File Name: P614529
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	27.8		0.105	0.491	0.79	1.001	1
1,2,3,7,8-PeCDD	105		0.0677	2.45	1.60	1.000	1
1,2,3,4,7,8-HxCDD	97.4		0.0277	2.45	1.26	1.000	1
1,2,3,6,7,8-HxCDD	103		0.0289	2.45	1.26	1.000	1
1,2,3,7,8,9-HxCDD	101		0.0260	2.45	1.26	1.007	1
1,2,3,4,6,7,8-HpCDD	83.6		0.0396	2.45	1.06	1.000	1
OCDD	199		0.0793	4.91	0.90	1.000	1
2,3,7,8-TCDF	21.4		0.0444	0.491	0.79	1.001	1
1,2,3,7,8-PeCDF	100		0.0659	2.45	1.55	1.001	1
2,3,4,7,8-PeCDF	109		0.0667	2.45	1.57	1.000	1
1,2,3,4,7,8-HxCDF	101		0.0171	2.45	1.24	1.000	1
1,2,3,6,7,8-HxCDF	101		0.0173	2.45	1.24	1.000	1
1,2,3,7,8,9-HxCDF	98.8		0.0174	2.45	1.26	1.000	1
2,3,4,6,7,8-HxCDF	102		0.0170	2.45	1.24	1.000	1
1,2,3,4,6,7,8-HpCDF	103		0.0690	2.45	1.06	1.000	1
1,2,3,4,7,8,9-HpCDF	104		0.0761	2.45	1.05	1.000	1
OCDF	260		0.118	4.91	0.91	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ1800356-03

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.185g

Date Analyzed: 09/12/18 13:51
Date Extracted: 9/5/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614520
Cal Ver. File Name: P614516

Data File Name: P614529
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	27.8		0.105	0.491	0.79		1
Total Penta-Dioxins	105		0.0677	2.45	1.60		1
Total Hexa-Dioxins	302		0.0274	2.45	1.26		1
Total Hepta-Dioxins	83.6		0.0396	2.45	1.06		1
Total Tetra-Furans	21.4		0.0444	0.491	0.79		1
Total Penta-Furans	213		0.0663	2.45	1.66		1
Total Hexa-Furans	404		0.0172	2.45	1.22		1
Total Hepta-Furans	207		0.0722	2.45	1.06		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080100
Sample Matrix: Soil

Service Request: E1800806
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ1800356-03

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.185g

Date Analyzed: 09/12/18 13:51
Date Extracted: 9/5/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614520
Cal Ver. File Name: P614516

Data File Name: P614529
ICAL Date: 03/29/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	708.586	35		25-164	0.80	1.018
13C-1,2,3,7,8-PeCDD	2000	1024.603	51		25-181	1.56	1.164
13C-1,2,3,4,7,8-HxCDD	2000	1152.654	58		32-141	1.27	0.992
13C-1,2,3,6,7,8-HxCDD	2000	1025.057	51		28-130	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1103.581	55		23-140	1.06	1.066
13C-OCDD	4000	1393.418	35		17-157	0.91	1.143
13C-2,3,7,8-TCDF	2000	891.464	45		24-169	0.80	0.993
13C-1,2,3,7,8-PeCDF	2000	1141.033	57		24-185	1.59	1.126
13C-2,3,4,7,8-PeCDF	2000	1062.013	53		21-178	1.59	1.155
13C-1,2,3,4,7,8-HxCDF	2000	1251.500	63		26-152	0.53	0.973
13C-1,2,3,6,7,8-HxCDF	2000	1096.450	55		26-123	0.53	0.976
13C-1,2,3,7,8,9-HxCDF	2000	1390.786	70		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1201.136	60		28-136	0.54	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	951.475	48		28-143	0.46	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	1208.364	60		26-138	0.46	1.079
37Cl-2,3,7,8-TCDD	800	413.877	52		35-197	NA	1.018

**APPENDIX E – ENVIRONMENTAL TASK ORDER AND
MASTER SERVICES AGREEMENT**



Environmental Services Task Order

This Environmental Service Task Order ("Order") is made on **8/1/2018**, between Umpqua Bank ("Umpqua") and **Terracon Consultants, Inc *** ("Consultant"). By their execution of this Order, Umpqua Bank retains, and Consultant agrees to provide services as requested and according to the terms and conditions of the executed Environmental Services Agreement.

RIMS Project Number: 18-002488-03

Property/Project Name: Buse Timber & Sales
Loan Purpose: Refinance
Borrower: Diana Buse Timber & Sales
Property Address: 3812 28th PI NE
Everett, WA98205

Property Type: Industrial- Saw Mill/Lumberyard
Property Description: The subject consists of 60.54 acres of industrial zoned land located at 3812 28th Place NE in Everett. (Note that a portion of the property that was agriculturally zoned has been sold off). Improvements include seven buildings constructed between 1961 and 1980. Gross building area is estimated at 54,973 SF. No significant improvements have been added to the property recently. Will need an "as is" fee simple value in a "summary-style" format. The report should include insurable replacement cost of the buildings (even if they contribute no value) and the environmental check sheet. The assignment may include some H&BU issues.

Access/Contact Info:

Diana Martin

425-258-5844

Due Date:

9/7/2018

Agreed Fee:

\$14,985.00, inclusive of all costs necessary to complete the report. Any costs not included in the fee must be approved in advance by Michael S Pereira.

Delivery & Invoice Instructions:

Please upload a Final Report and Invoice in PDF format for review to RIMSCentral. Hard copies are not required unless specifically requested.

Address Report & Questions to: Michael Pereira, VP Environmental Risk Officer

Umpqua Bank

509-842-9178

michaelpereira@umpquabank.com



1233 Northwood Center Ct
Coeur D Alene, ID83814

Loan Officer Information:

Leslie Somes

Umpqua Bank

LeslieSomes@UmpquaBank.com
425-673-8579

Consultant Information:

Matt Wheaton
Terracon Consultants, Inc *
425-771-3304
21905 64th Avenue W, Suite 100
Mountlake Terrace, WA98043

Scope of Services:

Scope of Work to Follow: Phase II ESA. Reliance by Umpqua Bank.

Changes to Scope:

Umpqua Bank and the Consultant may make changes, additions, or deletions from this Task Order by mutual written agreement only (email is acceptable).

By accepting this award electronically, you agree to the terms of this engagement, including terms set forth in documents incorporated herein by reference. Please include a copy of the Task Order in the addenda of the report.

AMENDING AGREEMENT #1

THIS AMENDING AGREEMENT dated 08/06/2018

BETWEEN:

Umpqua Bank

OF THE FIRST PART

- AND -

Matt Wheaton / Terracon Consultants, Inc *

OF THE SECOND PART

Background

- A. Umpqua Bank and Matt Wheaton (the Parties) entered into the contract (the "Contract") dated 08/01/2018, for Environmental services.
- B. The Parties desire to amend the Contract on the terms and conditions set forth in the Amending Agreement (the "Agreement").
- C. This Agreement is amendment #1 to the Contract.

IN CONSIDERATION OF the Parties agreeing to amend their obligations in the existing Contract, and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree to keep, perform, and fulfill the promises, conditions and agreements below:

Amendments

The Contract is amended as follows:

Award Fee (as amended): \$14,985.00

Due Date (as amended): 09/14/2018

Scope Comments: Drillers are booked out to 8/17, moved to accommodate schedule.

No Other Change

Except as otherwise expressly provided in this Agreement, all of the terms and conditions of the Contract remain unchanged and in full force and effect.

Miscellaneous Terms

Capitalized terms not otherwise defined in this Agreement will have the meanings ascribed to them in the Contract. Headings are inserted for the convenience of the parties only and are not to be considered when interpreting this Agreement. Words in the singular include the plural and vice versa. Words in the masculine include the feminine and vice versa. No regard for gender is intended by the language in this Agreement.

Governing Law

Subject to the terms of the Contract, it is the intention of the Parties that this Agreement, and all suits and special proceedings under this Agreement, be construed in accordance with and governed, to the exclusion of the law of any other forum, by the laws of the state of , without

regard to the jurisdiction in which any action or special proceeding may be instituted.

Please include a signed copy of this letter as an addendum to the completed report, *in addition to the original contract and any other amendments.*

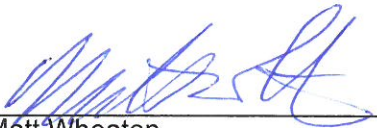
Sincerely,

Michael S Pereira

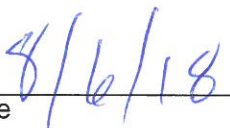
VP Environmental Risk Officer
Umpqua Bank
Environmental Department

Accepted By:

Terracon Consultants, Inc *



Matt Wheaton



Date

AMENDING AGREEMENT #2

THIS AMENDING AGREEMENT dated 09/13/2018

BETWEEN:

Umpqua Bank

OF THE FIRST PART

- AND -

Matt Wheaton / Terracon Consultants, Inc *

OF THE SECOND PART

Background

- A. Umpqua Bank and Matt Wheaton (the Parties) entered into the contract (the "Contract") dated 08/01/2018, for Environmental services.
- B. The Parties desire to amend the Contract on the terms and conditions set forth in the Amending Agreement (the "Agreement").
- C. This Agreement is amendment #2 to the Contract.

IN CONSIDERATION OF the Parties agreeing to amend their obligations in the existing Contract, and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree to keep, perform, and fulfill the promises, conditions and agreements below:

Amendments

The Contract is amended as follows:

Award Fee (as amended): \$14,985.00

Due Date (as amended): 09/17/2018

Scope Comments: Lab delay, will be completed by close of business on Monday.

No Other Change

Except as otherwise expressly provided in this Agreement, all of the terms and conditions of the Contract remain unchanged and in full force and effect.

Miscellaneous Terms

Capitalized terms not otherwise defined in this Agreement will have the meanings ascribed to them in the Contract. Headings are inserted for the convenience of the parties only and are not to be considered when interpreting this Agreement. Words in the singular include the plural and vice versa. Words in the masculine include the feminine and vice versa. No regard for gender is intended by the language in this Agreement.

Governing Law

Subject to the terms of the Contract, it is the intention of the Parties that this Agreement, and all suits and special proceedings under this Agreement, be construed in accordance with and governed, to the exclusion of the law of any other forum, by the laws of the state of , without

regard to the jurisdiction in which any action or special proceeding may be instituted.

Please include a signed copy of this letter as an addendum to the completed report, *in addition to the original contract and any other amendments.*

Sincerely,

Michael S Pereira

VP Environmental Risk Officer
Umpqua Bank
Environmental Department

Accepted By:

Terracon Consultants, Inc *



Matt Wheaton



Date

ENVIRONMENTAL SERVICES AGREEMENT

This Environmental Services Agreement ("Agreement"), is made effective as of June 10, 2015, between Terracon Consultants, Inc., whose address is 18001 W. 106th Street, Suite 300, Olathe, KS 66061 ("Consultant") and Umpqua Bank ("Umpqua"), an Oregon state chartered bank, whose address is 1 SW Columbia, Suite 1200, Portland OR 97258 (each a "Party" and collectively, the "Parties").

Whereas, Umpqua may require professional environmental services and Consultant is engaged in the business of providing professional environmental services from time to time, and Umpqua will retain control over the subject of the work;

Now, therefore, the parties agree as follows:

1. **Scope of Services.** Umpqua may request services from Consultant regarding a particular property ("Property") in the form of an electronic request for proposal (RFP). Requests may be made electronically and proposals can be submitted electronically. Proposals shall clearly specify the subject Property and shall contain a detailed scope of work, timeline to complete and pricing. In the case of a Phase I Environmental Site Assessment, Consultant's proposal shall comply with U.S. EPA Standards and Practices for All Appropriate Inquiries and the most recent ASTM Standard (currently E1527-13), Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

Upon electronic approval of proposal by Umpqua, services will be awarded directly to Consultant using an electronic award system or other means. Services to be provided may include, but need not be limited to, the following:

- Regulatory Records Review
- Environmental Transaction Screen
- Site Inspection
- Property Condition Assessment
- Seismic Studies
- Geotechnical Investigation
- Asbestos and Lead-based Paint Survey
- Phase I Environmental Site Assessment
- Phase II Environmental Assessment/Subsurface Investigation
- Peer Review/Technical Support
- Remediation Cost Estimating/Analysis
- Site Remediation/Site Closure

In performing a Phase I Environmental Site Assessment, Consultant shall comply with the most current ASTM Standard (currently E1527-13/AAI Phase I Environmental Site Assessment), and any future ASTM Phase I Standard yet to be released. The services shall include, without limitation, the following: (i) review, within AAI compliant search parameters, of available federal environmental databases and applicable state and local databases, geocoded as available upon area locator map; (ii) visual and physical on-site inspection, as allowed, and observation of the Property for above ground or underground storage tanks, reasonably ascertainable indicators of CERCLA defined environmental contaminants and hazardous materials, generally recognized environmental contaminants and visible pollutants, and railroad right-of-ways; (iii) review of available city directories, Sanborn maps or other available historical information back to at least 1940 or first use, whichever is earlier, local emergency release records, and environmental permits; (iv) visual interior observations, as allowed, for reasonably ascertainable indicators of contamination from airborne emissions, vapor intrusion, asbestos-containing materials, lead

based paint, PCB-containing transformers, radon, underground fuel storage tanks, business operation procedures, regulated materials handling and storage practices, and waste stream disposal; (v) completion as allowed of an environmental screening questionnaire by Key Site Manager; (vi) visual observation of adjoining and adjacent properties for reasonably ascertainable potential environmental hazards and contaminants; (vii) photographic documentation of on-site conditions and adjoining properties; (viii) interviews as allowed with Property owner, past Property owners, occupants and persons knowledgeable about the Property; (ix) review of available title information for potential gaps in past Property use or ownership and search for environmental liens; and (x) geologic and hydrogeologic review to evaluate potential contaminant migration pathways and exposure routes as applicable. Consultant shall not disturb the soil or groundwater, dig holes or wells, or otherwise perform physical tests of or take samples from the Property, without first obtaining Umpqua's written instruction to do so. If Consultant is denied access to the Property for any reason, or is otherwise instructed to leave or vacate the Property, or any portion thereof, Consultant shall comply with such instructions, without argument or other opposition, and shall thereafter promptly notify Umpqua in writing that it was denied access to the Property.

2. **Change Orders.** All services or work, other than as agreed upon in the form of a proposal accepted electronically by Umpqua, but in connection with a specific proposal, shall be done only through a mutually agreed upon electronically or by email ("Change Order"). Change Orders shall contain a detailed scope of work, timeline to complete, and pricing.

3. **Entire Agreement.** Consultant shall provide services as outlined in this Agreement, which constitutes the entire agreement between Umpqua and Consultant, superseding all prior and contemporaneous negotiations, agreements, representations and understandings, either written or oral, of the parties with respect to this Agreement. With respect to each particular Property, this Agreement shall govern the performance of the subject written proposal as originally accepted by Umpqua, and as such proposal may be changed through one or more Change Orders. For clarity, no proposal or Change Order may add, delete, or change any terms of this Agreement.

4. **Changes to this Agreement.** Umpqua and Consultant may make additions, deletions, or changes to this Agreement by mutual written agreement only.

5. **Termination.** This Agreement shall be effective as of the date specified herein and shall continue in effect thereafter, unless terminated as provided herein. Umpqua may terminate this Agreement for convenience or for the default of Consultant upon 30 days written notice to Consultant, and following such notice, Consultant shall: (i) discontinue work as promptly as practicable, (ii) attempt to minimize charges, and (iii) submit to Umpqua a written report of findings up to the date of termination. Consultant may terminate this Agreement upon 30 days written notice to Umpqua, and following such notice, Consultant shall complete any outstanding projects and will be paid for all properly completed work in accordance with this Agreement (provided that Umpqua shall retain the right to terminate this Agreement even after Consultant terminates it, in which case the immediately preceding sentence shall control). Umpqua may terminate any work being done under any particular proposal, in which case Umpqua will pay for the work done thereunder prior to such termination and Consultant will give Umpqua all of the materials and work in process relating to such work.

6. **Umpqua's Responsibilities.** Umpqua will: (1) provide the information reasonably available to Umpqua pertinent to the project, including previous reports and any other pertinent data in Umpqua's possession and (2) arrange rights of access or permission to enter the Property as required for Consultant to perform its services under this Agreement. If access is denied to all or any portion of the Property, Consultant shall notify Umpqua in writing immediately, complete all other portions of the services and provide a reasonable recommendation to Umpqua as to the likelihood of elevated risk of contamination. Umpqua will then make a determination whether to proceed or continue to pursue

Property access. If Umpqua obtains access, Consultant will perform site reconnaissance and complete the assignment as intended in the original scope.

7. **Reliance on Third Parties.** Consultant may rely without confirmation upon information provided by others and federal, state, and local agencies, pertinent to the Property to the extent such reliance is reasonable.

8. **Payment.** Umpqua will pay undisputed invoices within 30 days of Umpqua's receipt thereof.

9. **Insurance and Limitation of Liability.** Consultant shall, during the performance of this Agreement, at its cost, keep in force adequate insurance coverage to protect Umpqua from any losses with respect to Consultant's performance under this Agreement. Such coverage shall include (at a minimum) the following insurance: (1) Worker's Compensation Insurance as required by law, (2) Employer's Liability Insurance with minimum limits of \$1,000,000; (3) Comprehensive General Liability Insurance with minimum limits of \$1,000,000 per occurrence, \$5,000,000 aggregate; (4) Comprehensive Automobile Liability Insurance, including operation of owned, non-owned, and hired automobiles with minimum limits of \$1,000,000 per claim; (5) Professional Liability, Errors and Omissions Insurance with minimum limits of \$2,000,000 per occurrence; and (6) Contractor Pollution Liability Insurance with minimum limits of \$2,000,000 per occurrence.

Consultant will furnish Umpqua, upon request, insurance certificate(s) reflecting Consultant's compliance with the requirements of this section.

All such insurance policies shall be issued by properly licensed insurance companies with a current A.M. Best rating of "A-VII" or better. Consultant shall list Umpqua as an additional insured. Such insurance will be primary and noncontributory to insurance or self-insurance maintained by Umpqua. Consultant, or its insurance company, shall give thirty (30) days prior written notice to Umpqua of cancellation, non-renewal, or material change in coverage, scope or amount of any insurance policy.

10. **Standard of Care / Warranty.** Consultant shall perform its services in accordance with generally accepted national, state and local engineering and technical practices and professional standards prevailing in the locality of the Property, current at the time the services are performed.

11. **Confidentiality.** Any information and documentation Umpqua provides to Consultant is deemed to be Umpqua's confidential information ("Umpqua Confidential Information") unless Umpqua states in writing that it is not Umpqua Confidential Information. Such information does not lose its status as Umpqua Confidential Information merely because it is known by a limited number of persons or entities outside of Umpqua or because it was not originated by Umpqua. With respect to Umpqua Confidential Information, Consultant shall:

- (a) Protect and keep such Confidential Information secret and secure from disclosure and unauthorized use with the same degree of precautions and safeguards it uses to protect and keep its own Confidential Information of a similar nature secret and secure, but in no case with less than reasonable care;
- (b) Comply with all laws, rules and regulations regarding the sharing of Confidential Information, including all applicable privacy laws;

- (c) Disclose such Confidential Information only to its employees, Subcontractors and/or agents who have both: (i) a need to know such information in order to perform under this Agreement, and (ii) a written contractual, fiduciary or other legal duty, at least as restrictive as this Agreement, to maintain the confidentiality of the information they receive. Contractor shall not disclose Confidential Information to any third party without Umpqua's prior written authorization; and
- (d) Not use or disclose, or permit any of its employees, Subcontractors and/or agents to use or disclose, any such Confidential Information for any reason other than performance under this Agreement, and in no event will Contractor disclose or use such Confidential Information in any manner that is or has the potential to be adverse or detrimental to the interests of Umpqua;

Required Disclosure. Contractor may disclose Confidential Information as may be required by law, statute, rule or regulation, including any subpoena or other similar form of process. Prior to such disclosure, Consultant shall provide Umpqua with prompt written notice (so long as such notice is not prohibited by law), so that Umpqua may object to the request and/or seek appropriate protective relief. Notwithstanding anything to the contrary, Umpqua may disclose any information, including Consultant's Confidential Information, in response to a request from any federal or state bank examiner, or other regulatory official with authority over Umpqua or its affiliates.

Return or Destruction. Upon termination of this Agreement, or if earlier requested by Umpqua in writing, Contractor shall, within ten (10) business days, at Umpqua's election, destroy or return to Umpqua all Confidential Information, including originals and all duplicates, whether standing alone or as part of any other document or other compilation of information, or in any other form, including hardcopy (paper, micro film, photo, etc.) or softcopy (electronic, optical, or magnetic media such as computer or disk storage, tape recording, e-mail, voicemail, etc.); provided, however, that Contractor may keep a copy if necessary for compliance with legal or regulatory obligations, subject to the continuing confidentiality obligations set forth in this Agreement. Upon request, an officer of Contractor shall promptly provide Umpqua with written certification of such destruction or return.

Intrusions/Disclosures. If Consultant learns of any actual or suspected theft of, accidental disclosure of, loss of, or inability to account for any Confidential Information by Consultant or any of its Subcontractors (collectively "Disclosure") and/or any unauthorized intrusions into Consultant's or any of its Subcontractor's facilities or secure systems used to perform the Services (collectively "Intrusion"), Consultant must, at its own expense, immediately (i) notify Umpqua's information security officer, (ii) specify the corrective action to be taken, (iii) take corrective action to prevent further Disclosure and/or Intrusion. Consultant must, as soon as is reasonably practicable, make a report to Umpqua including details of the Disclosure (including Customer(s)' identities and the nature of the information disclosed) and/or Intrusion and the corrective action Consultant has taken to prevent further Disclosure and/or Intrusion. Consultant shall cooperate and assist Umpqua at no additional cost to minimize any potential adverse impact upon Umpqua. Additionally, Consultant must cooperate fully with all government regulatory agencies and law enforcement agencies having jurisdiction and authority for investigating a Disclosure and any known or suspected criminal activity.

Ownership. Confidential Information shall remain the property of Umpqua.

Marketing, Publicity. Except upon the prior written consent of a Umpqua communications or public relations director, which may be granted or withheld in Umpqua's sole discretion, Consultant shall not: (a) publicly disclose any information regarding the existence or terms of this Agreement, the existence or any aspects of the business relationship between Umpqua and Consultant, whether in a news release, press conference, or otherwise, (b) disclose any of the foregoing information to any person or entity for any purpose other than Consultant's performance under this Agreement, or (c) use any of the Umpqua

trade names, trademarks, trade dress, service marks, logos, branding or other Umpqua Intellectual Property for any purposes (including customer lists, websites, advertisements, releases to professional or trade publications, sales presentations, performance of services for other customers, etc.).

12. **Ownership and Use of the Results of the Services.** All of the results of the services performed by Consultant hereunder, including any such plans, testing, layouts, schematics, data, reports, studies, cost estimates, and other materials created or prepared hereunder, alone or with others, whether created on or off Umpqua's premises, whether or not created during regular work hours, and whether interim or final (collectively, "Work Product") shall be deemed "work made for hire" as defined in 17 U.S.C. §101 & §201(b), and shall be the exclusive property of Umpqua. Umpqua shall be deemed the owner of the Work Product and may, without notice to or permission from Consultant, provide copies of the Work Product as necessary in the course of normal and customary property due diligence, and assign its interest in the Work Product as appropriate to the final property disposition.

13. **Compliance with Laws.** Consultant shall comply with all laws, statutes, rules, regulations and ordinances that are applicable to the services provided.

14. **Independent Contractor.** Consultant is an independent contractor in the performance of the services to be provided under this Agreement and, except as otherwise provided in this Agreement, shall not be or hold itself out, as an agent or employee of the Umpqua. Consultant shall have control of and responsibility for its employees and its subcontractors engaged in the performance of this Agreement.

15. **Indemnity.** Consultant and Umpqua ("Indemnifying Party") agree to defend, indemnify and hold the other Party, its affiliates, and its and their directors, officers, employees, and agents (collectively, "Indemnified Party") harmless from and against any and all claims, liabilities, damages and costs, including without limitation, reasonable attorney's fees, arising out of or in any related, directly or indirectly, to the Indemnifying Party's breach of or failure to perform its duties and/or obligations under this Agreement. In this and all other respects, Consultant shall be fully responsible for the acts and omissions of its subcontractors (i.e., all acts and omissions of Consultant's subcontractors shall be imputed to Consultant).

16. **Severability.** If any part of this Agreement is adjudged as illegal, invalid or unenforceable, it shall be deemed modified in the manner that best advances the spirit of this Agreement.

17. **Attorney's Fees.** If any suit, dispute or action arises from or in connection with this Agreement is commenced, the prevailing party shall be entitled to recover all reasonable attorney fees, costs and expenses incurred, including, but not limited to, any at trial, on appeal, or in a bankruptcy proceeding.

18. **Force Majeure.** Any loss or damage or delays in, or failure of performance of either Party shall not constitute default or give rise to any claims for damages if and to the extent that such loss, damage, delay or failure is caused by occurrences beyond the reasonable control of the Party affected, and which, by the exercise of reasonable diligence, such Party is unable to prevent.

19. **Governing Law & Venue.** This Agreement is made under and shall be governed by and construed and enforced under the laws of the state of Oregon, without giving effect to Oregon's conflicts of laws principles. Any action, suit, or proceeding relating directly or indirectly to this Agreement shall be brought exclusively in the state or federal courts located in Multnomah county, Oregon, and the parties irrevocably submit to the exclusive jurisdiction of that court for any such action, suit or

proceeding, and hereby waive any right to contest such exclusive jurisdiction or change such venue on any grounds.

20. **Successors & Assigns.** This Agreement shall be binding on the Parties and their successors. Except as provided herein, neither Party may not assign this Agreement, in whole or in part, except upon the other Party's prior written consent.

21. **Taxes.** Consultant shall pay all applicable sales, use, gross receipts, net income or any labor or employment related taxes or other taxes levied by any taxing authorities on Consultant whose jurisdictions apply to Consultant. Consultant shall invoice Umpqua for sales and use taxes of the type required to be collected from purchasers under applicable law for the services and Consultant shall remit such taxes to the proper taxing authority. If Consultant fails to invoice, collect, remit, or otherwise pay the amount of any taxes required to be collected or paid by Umpqua, Consultant shall be responsible for and shall pay any interest, assessments, fines and penalties which may be assessed against Umpqua or Consultant for Consultant's failure to collect and timely remit or otherwise pay such taxes.

22. **Records.** Consultant will retain all information obtained or created in the course of performance under this Agreement in accordance with applicable law. Such records will be available for examination and audit by any governmental authority having jurisdiction over Umpqua's business or by Umpqua's internal or external auditors. Consultant will promptly notify Umpqua of any such requests by any governmental authority, if Consultant is permitted to make such a disclosure to Umpqua under applicable law. At Umpqua's request, Consultant shall provide documentation satisfactory to Umpqua of Consultant's internal controls and procedures that are required to ensure compliance with this Agreement and all applicable law. Consultant will reasonably cooperate with Umpqua's periodic risk assessments, if any, including providing physical security, information security, business continuity plan and financial stability information to Umpqua upon request.

23. **Performance Threats.** Consultant will promptly notify Umpqua in writing in the event of: (a) financial difficulty of Consultant or any of its Subcontractors that may materially impact Consultant's performance hereunder; (b) significant staffing reductions or changes in key staff that may affect Consultant's performance hereunder; (c) a decision by Consultant to outsource, relocate, sell or acquire significant operations or support associated with the services or any critical component of the environment used to provide services hereunder; (d) cessation of business or material adverse change in any business of any key subcontractor used by Consultant in its performance hereunder; (e) any unfavorable change to any credit rating assigned to Consultant by any major credit rating agency; (f) an announced intention or the actual filing for bankruptcy or insolvency law by Consultant or any key subcontractor used by Consultant in its performance hereunder; (g) a labor strike against Consultant or any key subcontractor used by Consultant in its performance hereunder; or the (h) closing of any operational site of Consultant or of any key subcontractor used by Consultant in its performance hereunder.

24. **Miscellaneous.** No provision of this Agreement, nor any breach thereof, may be waived, deleted, or modified, nor may any provisions be added, in any manner except pursuant to a writing signed by the Party against whom it is to be enforced. Absent such a signed waiver, no failure or delay in enforcing any right or remedy (including, but not limited to, any course of dealing or performance) shall preclude any exercise or further exercise of that or any other right or remedy. The provisions of this Agreement shall survive termination of this Agreement to as their terms may naturally dictate. The rule of interpreting ambiguities against the drafter shall not apply. Umpqua affiliates (i.e., entities directly or indirectly in control of, controlled by, or under common control with, Umpqua) may procure services from Consultant hereunder, in which case such affiliate shall also have all the rights and obligations of Umpqua hereunder with respect to the proposal accepted by such affiliate (i.e., this Agreement shall



govern with respect to the proposal as if the affiliate were Umpqua hereunder). Consultant represents and warrants that it has not and shall not in the future bestow any preferential benefits or treatment upon any Umpqua employee as an inducement to entering into this Agreement or otherwise in relation to this Agreement or in relation to any future proposal to be submitted with respect hereto.

25. Supplemental Terms and Conditions attached hereto and incorporated for reference.

In witness whereof, each of the Parties hereto has executed this Agreement effective as of the date written above.

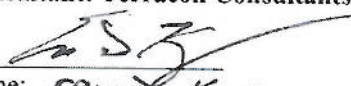
Umpqua Bank

By: 

Name: Michael S. Pereira

Title: Env. Risk Officer

Consultant: Terracon Consultants, Inc.

By: 

Name: Eric S. Kunz

Title: REGIONAL MANAGER / SR. PRINCIPAL

Section 25 Supplemental Terms and Conditions

LIMITATION OF LIABILITY. Notwithstanding anything to the contrary in this Agreement, except for a Party's confidentiality obligations, and willful misconduct or gross negligence of a Party (liability for each of which is not limited), the aggregate liability of either Party for any breach or breaches of its obligations under this Agreement or for the negligent act or omission of such Party or such Party's employees, subcontractors and agents shall be the greater of \$500,000 or the Consultant's fee for the specific project proposal in dispute. EXCEPT FOR A PARTY'S CONFIDENTIALITY OBLIGATIONS, AND WILLFUL MISCONDUCT OR GROSS NEGLIGENCE OF A PARTY, IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL OR PUNITIVE DAMAGES OF ANY KIND, EVEN IF ADVISED OF THE POTENTIAL FOR ACCRUAL OF SUCH DAMAGES.

Warranty. Except for the standard of care previously stated, Consultant makes no warranties or guarantees, express or implied, relating to Consultant's services and Consultant disclaims any implied warranties or warranties imposed by law, including warranties of merchantability and fitness for a particular purpose.

Safety. Consultant will be responsible for supervision and site safety measures for its own employees, but shall not be responsible for the supervision or health and safety precautions for any third parties, including Umpqua's contractors, subcontractors, or other parties present at the site.

APPENDIX F – ACCESS AGREEMENT

ACCESS AGREEMENT

DEFINITIONS

The property to which access is granted is: Property ("Property").

The legal owner(s) of the Property or person/entity with legal authority to grant access to the Property is: Diana Martin ("Grantor").

The services to be conducted on the Property are generally described as follows: Service ("Services").

The entity granted access for the purposes of performing the Services is Terracon Consultants, Inc., which shall include its employees, agents, and subcontractors ("Grantee").

The Services are performed for the benefit of Umpqua Bank ("Client"), pursuant to the Agreement for Services between Terracon Consultants, Inc. and Client, date and reference number 08/17/2018 P81187331.

AGREEMENTS

By its signature below, Grantor represents it has authority to, and does, grant access to the Property to Grantee for the purpose of performing the Services. Grantor agrees that:

- Grantee may drill exploration borings on the Property, using drill rigs, trucks and other equipment, recover and collect soil, water, and other samples, and perform other actions related to the exploration of surface or subsurface conditions on the Property, as necessary to perform the Services.
- Grantee may use large truck or track-mounted equipment in the performance of the Services, which is normal and customary in the performance of these kinds of Services, and that this equipment may leave depressions, wheel tracks, ruts or other marks in the ground surface.
- Grantor will not interfere with any of the activities of Grantee or undertake any actions regarding the use of Property that would endanger the health, safety, or welfare of the Grantee employees, agents, or subcontractors, or damage their equipment, materials, or property.

By its signature below, Grantee agrees:

- That upon completion of Services and activities authorized by this Access Agreement, Grantee will remove all material and equipment utilized by Grantee from the Property, with the exception of ground markers that may be placed on the premises to designate sampling areas,
- Grantee will remove boring spoils that accumulate around the bore holes, or, where allowable, spread the spoils across the area, if acceptable to Grantor.
- Grantee will make reasonable efforts to restore the property and leave it in a condition suitable for its previous use. Landscaping restoration, including seeding or sodding, will not be performed.

The Services and field activities authorized under this Access Agreement may begin after signature of Grantor. Access is granted until Services are completed, which should not exceed 30 days following commencement of Services, except for period of access necessary for monitoring equipment, if applicable, after which time all rights of access given by Grantor shall cease.

SIGNATURES

Grantee: **Terracon Consultants, Inc.**
 By: *Kyle S. Bennett* Date: **8/7/2018**
 Name/Title: **Kyle S. Bennett / Environmental Technician II**
 Address: **21905 64th Ave W, Ste 100**
Mountlake Terrace, WA 98043-2251
 Phone: **(425) 771-3304** Fax: **(425) 771-3549**
 Email: **Kyle.Bennett@terracon.com**

Grantor: **Diana Martin**
 By: *Diana Martin* Date: **8/7/18**
 Name/Title: **Site Access/Contact**
 Address: **3812 28th Place Northeast**
 Phone: **(253) 258-5844** Fax:
 Email: **dianamartin@busetimber.com**



***Phase II Environmental Site Investigation
Buse Timber & Sales
3812 28th Place Northeast
Everett, WA 98201***

**Prepared for:
SPE and IOS JV Holdings, LLC**

**December 9, 2021
Alterra-064**



***Phase II Environmental Site Investigation
Buse Timber & Sales
3812 28th Place Northeast
Everett, WA 98201***

Prepared for:
SPE and IOS JV Holdings, LLC

December 9, 2021
Alterra-064

A handwritten signature in black ink, appearing to read 'Jie Xu'.

Jie Xu, PE
Project Manager



JOHN P. FOXWELL

John Foxwell, LHg
Principal

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1.0 Introduction

Apex Companies, LLC (Apex) has prepared this Phase II Environmental Site Assessment (ESA) for SPE and IOS JV Holdings, LLC to provide the results of soil, groundwater, and drainage sediment sampling and analysis for the Buse Timber & Sales Inc. (the Site) located at the 3812 28th PI NE in Everett, Washington 98201 (Figure 1).

The scope of the Phase II ESA was completed at several areas at the Site where Recognized Environmental Conditions (RECs) were identified based on the findings of the Phase I ESA for the Site (Apex, 2021).

1.1 Site Description

The Site consists of two parcels of land (Parcel No. 29050400300600 and 29050900201500) comprising approximately 60.48 acres (Figure 2). Buse Timber & Sales Inc. has operated as a lumber mill at the site since the mid-1940s. Current operations include a sawmill facility, log storage, and 11 buildings including the main office, kilns, and maintenance and storage buildings (Figure 3). Log storage is located on the southern end of the Site, milling activities and lumber storage are located in the center of the Site. Operations and log storage areas are paved. The north end of the Site is unpaved and undeveloped. The Site is situated on generally flat terrain at a surface elevation of approximately 1 foot above mean sea level (amsl). The nearest body of water is the Union Slough located north and west adjacent to the Site. There is a drainage ditch encircling the Site that discharges any collected water to Union Slough through a tide gate at the north end of the Site. Surrounding properties generally consist of commercial or industrial businesses.

1.2 Previous Investigations

A number of previous environmental investigations have been conducted to document conditions at the Site. This section presents a summary of the findings of the previous investigations. This information was used to develop the scope of work for the Phase II ESA.

1990 Investigation. In 1990, the Washington Department of Ecology (Ecology) completed a Preliminary Assessment (PA) for the Buse Mill site. Elevated concentrations of pentachlorophenol (PCP) and tetrachlorophenol (TCP) were detected in drainage sediment samples near the former dip tank. Samples were not analyzed for dioxins. The PA concluded that there were no significant threats to human health and the environment. However, it did recommend sampling of the drainages and ranking under Ecology's Washington Ranking Method guidelines. Follow-up sampling was completed in site drainages, and PCP and TCP were not detected.

1994 Investigation. A Screening Site Inspection Report was prepared for the Site by URS on behalf of EPA (URS, 1994). This report summarized the results of a limited sampling event that included surface and subsurface soil, storm drain sediment, and drainage sediment sampling, and sediment sampling at the Site and nearby slough/river. Samples were tested for polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), metals, chlorinated phenols, and/or PCP. Dioxin analyses were not completed as part of this work.

No exceedances of background concentrations were found for the surface or subsurface soils. Samples collected from catch basins and in the North ditch (near the storm drain outfall) exceeded background concentrations of PCBs, lead, and mercury; however, none of these concentrations were significantly above background or Ecology Model Toxics Control Act (MTCA) Method A cleanup levels. PCP was detected at concentrations exceeding background levels in samples collected from the storm drains (one storm drain located approximately 100 ft east of the former dip tank) and storm drain outfall.

1998 Investigation and 2010 Update. Exponent conducted a Phase II ESA in August 1998 (Exponent, 1998) to address RECs identified in Exponent's April 1998 Phase I ESA. Boring locations are shown on Figure 4. The investigation consisted of sampling sediments in the drainage ditches surrounding the Site, sampling the storm drain system, and assessing soil and groundwater impacts at the Site. Samples were tested for Total Petroleum Hydrocarbons (TPH) and VOCs. Select soil and groundwater samples were tested for chlorinated phenols. One soil sample was analyzed for dioxins/furans. Detected concentrations of all analytes MTCA were below cleanup levels.

2018 Limited Site Investigation (LSI). In August 2018, Terracon conducted an LSI (Terracon, 2018b) to assess the potential presence of compounds of concern in subsurface soil and groundwater at the Site that may have originated from the RECs identified in the 2018 Phase I ESA prepared by Terracon (Terracon, 2018a). Boring locations are shown on Figure 4. This LSI included advancing six (6) soil borings (B1 through B6) and collecting soil and/or groundwater samples from each boring. The LSI results/findings are summarized as follows:

- Soil samples collected from B1 and B2 had concentrations of arsenic and/or chromium which exceeded their respective MTCA Method A cleanup levels. However, based on the additional analysis of the highest chromium concentration, the concentrations of chromium do not appear to be hexavalent chromium.
- Soil samples collected from B5 and B6 had concentrations of dioxins and furans. Although these concentrations are below their respective MTCA Method B cleanup level, they exceed the natural background concentrations of 5.2 ng/kg for dioxin and furan mixtures in soil.
- Only one groundwater sample was collected, from boring B2. This sample had concentrations of arsenic which exceeded the MTCA Method A cleanup level. The remaining groundwater sample results were either non-detected or below the MTCA Method A or MTCA Method B cleanup levels.

Terracon concluded that the operations at the Site with a vehicle maintenance area, wash-down area, diesel underground storage tank (UST) area, fire pond, and documented dioxins and furans appear to have previously contributed and may potentially continue to contribute to the release of select chemicals of concern to soils and/or groundwater. With the exception of arsenic in soil and groundwater, Terracon concluded that conditions representative of a large-scale release were not present.

It appears that arsenic concentrations identified in soil and groundwater are consistent with the current Site use. While there are arsenic exceedances to the MTCA cleanup level, Terracon inferred that they are limited to the Site soil and

groundwater within the limits of the Site boundary. Therefore, unless the Site use is proposed to change, Terracon did not recommend any additional investigations at this time.

1.3 Phase II ESA Sampling Plan Development

Apex completed a Phase I ESA for the Site in June 2021 (Apex, 2021). RECs were identified by Apex during the Phase I ESA. Based on the results of the Phase I ESA, the locations and rationale for the scope of the Phase II ESA are summarized below.

Identified REC, HREC, or Data Gap	Assessment Rationale
Soil and/or Groundwater	
Vehicle Maintenance	Assess TPH detected in groundwater at Terracon B2
Former Log Pond Fill	Characterize large fill area not previously characterized
Current Lube Building	Assess feature not previously assessed
Current Mechanics Shop	Assess for dioxins based on Terracon B5 results
Hog Fuel Mixing area	Assess surface soils in waste handling area.
Current Dip Tank	Assess soil and groundwater at current dip tank
Current Washdown Area	Characterize stained area at outlet to washdown and separator vault
Current AST area	Assess feature not previously assessed
Former Main Plant Drain	Assess feature not previously assessed
Former PCP Dip Tank	Assess soil and groundwater at former dip tank
Former UST Area	Assess soil and groundwater former UST area
AST Area	Assess feature not previously characterized
Surface Soil/Drainage Sediment	
Tide Gate	Characterize drainage sediments at outfall
East Drainage	Characterize drainage sediments after removal
West Drainage	Characterize ditch with limited existing data
East Drainage	Characterize ditch with limited existing data
South Drainage	Characterize ditch with limited existing data

1.4 Geology and Hydrogeology

The Site is located at Everett, Washington, which is in the central part of the Puget Sound Lowland. The geologic unit for this Site is Qyal, a Holocene aged younger alluvial and estuarine deposit (Minard, 1985). These deposits lie in and along the present streams near the water table. The sediment is largely sand, silt, and clay with considerable amounts of organic matter. Thickness of the younger alluvial and estuarine deposits probably exceeds 30 meters. The alluvium overlies deposits from the last Pleistocene glaciation.

The Site is located in the delta region of the Snohomish River, adjacent to and south of Union Slough on Smith Island north of the Snohomish River. According to historical information, the static water level at the Site is probably within a

range of 10 to 15 feet below ground surface (bgs). The depth to the water table varies due to tidal and river flow influences. The Site is relatively flat, with a general slope less than 5 degrees towards the northeast.

2.0 Field Activities

Field sampling activities included surface soil sampling, direct-push soil explorations for soil and groundwater samples, and drainage sediment sampling. Direct-push explorations (SB-1 through SB-14) and surface soil samples (SS-1 through SS-3) were completed between June 30 and July 1, 2021. Sediment samples were collected on July 2, 2021. Direct-push explorations were completed by Holocene Drilling with track mounted direct-push equipment (Geoprobe™ 7822DT). Boring logs for each boring are included in Appendix A.

2.1 Preparatory Activities

Prior to conducting the subsurface investigation, Apex notified Washington 811 to coordinate notification to public utility operators of the proposed subsurface investigation activities. Private utility locates to mark private utilities and subsurface features were completed by CNI Locates of Lake Bonney, Washington. A site-specific Health and Safety Plan (HASP) was prepared and reviewed during the daily tailgate meeting each day before work commenced.

2.2 Soil Sampling

Apex field-screened and collected soil samples continuously during drilling, using a core barrel lined with a clear acetate liner. Apex logged and described soil types in general conformance with the unified soil classification system (USCS) and observed for physical visual/olfactory evidence of contamination. The soil samples were field screened for volatile organic compounds (VOCs) using a calibrated photoionization detector (PID) and sheens were documented when observed.

Soil samples were prepared for laboratory analysis by sampling directly from the liners using a Terra Core™ soil sampler for VOCs and filling laboratory-provided glass jars for all other soil analyses. Each soil sample was uniquely labeled to identify its location, depth, date, and time of collection. The samples were collected with EPA Method 5035 sample preservation or transferred to laboratory-supplied sample containers and filled to eliminate headspace. Soil samples were then placed in a cooler with ice and shipped to Pace National Laboratory under chain of custody (COC) protocol.

2.3 Grab Groundwater Sampling

Groundwater was encountered in all borings except for SB-14. Groundwater samples were collected from temporary wells constructed of polyvinyl chloride (PVC) casing and screen. Grab groundwater samples were collected with a peristaltic pump. The bottles were labeled, chilled on ice, and transported under proper COC protocol to Pace National Laboratory of Mount Juliet, Tennessee.

After sampling was completed, each borehole was backfilled with hydrated bentonite and the boring was patched to match the existing surface (bare ground or asphalt).

2.4 Sediment Sampling

Sediment samples were collected on July 2, 2021 from an inflatable raft. A Russian peat corer was used for sample collection. Composite and discrete sediment samples were collected from select locations within the drainages. Sediment sampling locations are shown on Figure 6.

Three 3-point composite sediment samples were collected to represent the west drainage area (locations DR-2 through DR-4), east drainage area (DR-5 through DR-7), and south drainage area (DR-8 through DR-10). One discrete sample (DR-1) was collected near the tide gate to characterize sediment at the outfall. Sediment composite sub-samples were collected in equal aliquots from a depth of 0 to 12 inches below mud line (bml). The aliquots were placed into a stainless-steel bowl and homogenized. Each of the homogenized samples were then placed into laboratory-supplied sample containers, properly labeled, and submitted to the laboratory for analysis. The discrete sample analyzed (DR-1) was also collected from the 0 to 12-inch blm interval, placed into laboratory-supplied sample containers, properly labeled, and submitted to the laboratory for analysis.

2.5 Investigation-Derived Waste Disposal

Three 55-gallon drums (one containing soil cuttings and two containing decontamination/purged water) were generated and temporarily stored in a designated area on the Site. The drums were labelled with the project name, generator name, contact number, general contents, and date. Waste disposal is pending.

3.0 Laboratory Analytical Program

The laboratory analytical program includes analyses for Site Chemicals of Potential Concern (COPCs) in soil, groundwater, and drainage sediment. COPCs were identified based on prior results, chemical use history, and mill operations. The laboratory analytical plan for each portion of the Property is summarized below. Sampling results are summarized on Figures 5 through 8. Groundwater was collected from all boring locations except for SB-14.

Sampling and Analysis Summary

Sample Area	Sample Location	Exploration Depth (ft)	Analysis of Samples
Vehicle Maintenance	SB-1	20	TPH-Dx; VOCs; Chlorinated phenols; Metals.
Former Log Pond Fill	SB-2, SB-3, SB-9	Ranging from 15 to 25	TPH-Dx; VOCs; Chlorinated phenols; Dioxins/Furans

Sample Area	Sample Location	Exploration Depth (ft)	Analysis of Samples
Current Lube Building/Mechanics Shop	SB-4, SB-5	10	TPH-Dx; VOCs; Dioxins/Furans
Hog Fuel Mixing Area	SB-6; SS-1 through SS-3	15	TPH-Dx; VOCs; Chlorinated phenols; Dioxins/Furans
Current Dip Tank	SB-7	10	TPH-Dx; Chlorinated phenols
Current Washdown Area	SB-8	10	TPH-Dx
Current AST area	SB-9	25	TPH-Dx; VOCs
Former Main Plant Drain	SB-10	20	TPH-Dx; Dioxins/Furans
Former PCP Dip Tank	SB-11, SB-12	Ranging from 10 to 25	TPH-Dx; Chlorinated phenols; Dioxins/Furans
Former UST Area	SB-13	25	TPH-Dx; VOCs
AST Area	SB-14	10	TPH-Dx

Sample Area	Sample Location	Analysis of Samples
Tide Gate	DR-1	TPH-Dx; PAHs; PCBs; Dioxins/Furans
West Drainage	DR-2 through DR-4	TPH-Dx; PAHs; PCBs; Dioxins/Furans
East Drainage	DR-5 through DR-7	TPH-Dx; PAHs; PCBs; Dioxins/Furans
South Drainage	DR-8 through DR-10	TPH-Dx; PAHs; PCBs; Dioxins/Furans

DR-1, collected at the location of the tide gate, was a discrete sample. For the west, east, and south drainages, a composite sample was prepared from each drainage sub-sample (DR-2 to 4, etc.). Splits of individual sub-samples were retained in the event that follow-up analyses were requested.

Laboratory analyses were completed by Pace National Laboratory of Mt. Juliet, Tennessee. Soil, groundwater, and ambient air sampling results were analyzed for using one or more of the methods listed below.

- Diesel and oil range petroleum hydrocarbons (TPH-Dx) using NW TPH Methods;
- Polynuclear aromatic hydrocarbons (PAHs) using EPA 8270 SIM;
- Dioxins and furans using EPA 8290;
- PCBs using EPA 8082;
- Phenolic compounds, including PCP, using EPA 8270;
- Metals (arsenic, barium, cadmium, chromium, copper, lead, nickel, selenium, silver, mercury, zinc) using EPA 6000/7000 series methods; and
- VOCs in soil and groundwater using EPA Method 8260C, with EPA 5035 preservation for soil.

Groundwater samples were analyzed for TPH-Dx with and without silica gel cleanup. Silica gel cleanup removes biogenic polar organics, which interfere and result in a high bias.

4.0 Findings

The findings of the 2021 Phase II ESA are presented below. Tables 1 through 5 summarize the laboratory results and Figures 5 through 8 show the key sample results for each media sampled. Boring logs are included in Appendix A. Laboratory data is included in Appendix B.

4.1 Field Observation During Explorations

Soils encountered in the explorations consisted of varying gradations of silty clay, sand, and gravel to the total depth explored (approximately 25 feet bgs). Localized silty clay layers were observed in several borings between 0 and 7 feet bgs. Sandy clay or silty sand layers were observed in several deeper borings between 10 and 25 feet bgs.

Field screening information is included in the logs. Field screening indications of contamination (PID, sheen, and odor) generally were not observed at the sampling locations. When observed, PID readings ranged from <5 parts per million (ppm) to 6 ppm, with the highest readings observed at SB-5 at 6.0 feet bgs.

The direct-push borings were completed up to 25 feet bgs. Groundwater was encountered across the Site at varying depths between 7 and 24 feet as noted on the boring logs. At SB-8, shallow, perched water was encountered at a depth of 3 feet.

4.2 Soil and Groundwater Investigation

The soil and groundwater investigation results are discussed below according to each area of the Buse Mill where the data was collected. The soil and groundwater results are compared to the applicable MTCA Method A cleanup level for unrestricted land use. Where a MTCA Method A Cleanup level has not been established for a particular compound, the respective MTCA Method B Cleanup Level is applied for comparison. Soil dioxins/furans concentrations were reported in 2,3,7,8-Tetrachloro dibenzo-p-dioxin (TCDD) Total Toxicity Equivalence Quotient (TEQ) and compared to the Washington State background concentrations and MTCA Method B cleanup levels. In Washington, 2,3,7,8 TCDD Total TEQ of 5.2 pg/g or less in soil are considered below regional background concentrations.

The soil and groundwater sampling results for each area of the site are summarized below. Samples were analyzed for a range of parameters as summarized in Section 3. Most soil samples were analyzed for TPH-Dx. All analytical results are tabulated on Tables 1 through 5. Selected soil results are summarized on Figures 4 through 8. Laboratory reports are included in Appendix B.

4.2.1 Vehicle Maintenance Area

SB-1 was completed at the northwestern, downgradient corner of the vehicle maintenance area. SB-1 was completed to approximately 20 feet bgs. A grab groundwater sample was collected at approximately 15 feet bgs.

Soil Samples. Samples collected from 2 to 3 feet bgs and 6 to 7 feet bgs were analyzed for TPH-Dx (with silica gel cleanup). The SB-1 sample from 2 to 3 feet bgs was also analyzed for VOCs, chlorinated phenols, and metals. Concentrations of TPH-Dx, metals, and VOCs were detected. None of the detected concentrations exceeded cleanup levels.

Groundwater Sample. One grab groundwater sample was collected from a depth of approximately 15 feet bgs at SB-1 and analyzed for TPH-Dx, VOCs, and chlorinated phenols. TPH-Dx was analyzed with and without silica gel cleanup. Concentrations of TPH-Dx were detected when analyzed without silica gel cleanup. When silica gel cleanup was utilized, concentrations of DRO and RRO were not detected. VOCs and chlorinated phenols were not detected.

4.2.2 Former Log Pond Fill Area/ Current AST Area

SB-2, SB-3 and SB-9 were collected from the former log pond fill area. SB-9 is also in proximity to the current aboveground storage tank (AST) area.

Soil Samples. Each sample from this area was analyzed for TPH-Dx with silica gel cleanup. Soil samples from SB-2 and SB-9 were also analyzed for VOCs from multiple locations and intervals from this sample group. Select soil samples were also analyzed for chlorinated phenols and dioxins/furans. Chlorinated phenols compounds were not detected. Concentrations of TPH-Dx, VOCs, and dioxins/furans were detected. None of the detected concentrations exceeded cleanup levels.

Groundwater Samples. Groundwater samples were collected from SB-2, SB-3, and SB-9 and analyzed for TPH-Dx and chlorinated phenols. In SB-2 and SB-3, TPH-Dx was detected above cleanup levels when analyzed without silica gel cleanup. TPH-Dx was not detected above cleanup levels when silica gel cleanup was used. TPH-Dx was largely not detected in the groundwater samples from SB-9. Chlorinated phenols were not detected in groundwater samples from SB-2, SB-3, and SB-9.

4.2.3 Current Lube Building/Mechanics Shop Area

SB-4 and SB-5 were completed near the current lube building and mechanic shop area. The current lube building and mechanic shop were constructed after a former fire pond in this area was backfilled.

Soil Samples. Each sample from this area was analyzed for TPH-Dx. Soil samples were also analyzed for VOCs from multiple locations and intervals from this sample group. Select soil samples were also analyzed for dioxins/furans.

Only trace concentrations of TPH-Dx and VOCs were detected. None of the detected concentrations exceed cleanup levels. In the shallow interval (~2 to 4 feet deep) at SB-4 and SB-5, dioxins/furans were detected, but at concentrations below background concentrations and cleanup levels.

Groundwater Samples. Groundwater samples were collected from SB-4 and SB-5 and analyzed for TPH-Dx only. Significant concentrations of TPH-Dx were detected in each of these samples. TPH-Dx was detected above cleanup levels when analyzed without silica gel cleanup. TPH-Dx was not detected above cleanup levels when silica gel cleanup was used.

4.2.4 Hog Fuel Mixing Area

The hog fuel mixing area is used to mix oil-water separator sludges with wood waste and sold for hog fuel. This area is located at the southern portion of the Site. Direct push boring SB-6 and surface soil sampling (SS-1 through SS-3) were completed at a downgradient area of this mixing area.

Soil Samples. Each sample from this area was analyzed for TPH-Dx and VOCs. Only trace concentrations of TPH-Dx and VOCs were detected. None of the detected concentrations exceed cleanup levels. Surface soil samples (SS-1 through SS-3) were analyzed for dioxins/furans. Concentrations of dioxins in SS-1 through SS-3 expressed as Total 2,3,7,8 TEQ exceeded background concentrations, the 2,3,7,8 Dioxin Total TEQ in SS-1 exceeds the MTCA Method B cleanup level, and the Total HxCDD concentrations exceeds the same cleanup level.

Groundwater Sample. A groundwater sample was collected from SB-6 and analyzed for TPH-Dx only. Significant concentrations of TPH-Dx were detected in the sample. The detected concentration exceeded the MTCA Method A groundwater cleanup level by a factor of between 1.5 and 2. However, the TPH-Dx concentrations were significantly reduced to either below detection limits or below cleanup levels after being analyzed with silica gel cleanup.

4.2.5 Current and Former Dip Tank Areas

The current dip tank area is located approximately 70 feet south of the former dip tank area. A relatively minor amount of Buse's wood products is treated with a water-based anti-stain/brightener, which is completed at the current dip tank. The boring (SB-7) was completed to assess if any potential contamination originated from former/current dip tank operation.

Historically, wood treatment using PCP occurred at the former dip tank until at least 1986. Wood treatment with PCP was also reported to be limited (most Buse products are sold untreated). This dip tank reportedly did not have a cover or secondary containment. Borings SB-11 and SB-12/12A were completed to assess the former dip tank area. Groundwater was not encountered at SB-12; SB-12A was re-drilled at approximately one foot away from SB-12 to a total depth of 25 feet for groundwater sampling.

Soil Samples. Each sample from this area was analyzed for TPH-Dx and chlorinated phenols. Select soil samples were also analyzed for dioxins/furans. TPH-Dx was mostly not detected. None of the detected concentrations exceed cleanup levels. Chlorinated phenols compounds were not detected. Dioxins were detected in the shallow interval (~3 to 4 feet deep) at SB-11 and SB-12. Detected concentrations were below background concentrations and cleanup levels.

Groundwater Samples. Groundwater samples were collected from SB-7, SB-11 and SB-12A and analyzed for TPH-Dx. Samples collected from SB-11 and SB-12A were also analyzed for chlorinated phenols.

In sample SB-11W, collected at 6.8 feet bgs, PCP, 2,4,5- trichlorophenol and 2,4,6-pentachlorophenol were detected in groundwater. The detected concentrations of pentachlorophenol (58.4 µg/L) exceed the MTCA Method B cleanup level for cancer risks (0.22 µg/L). Chlorinated phenols were not detected in the sample SB-11 collected at 22 feet bgs. Chlorinated phenols were not detected in the sample from SB-7. Because the data were not collected from a monitoring well, turbidity from this shallow discrete sample may be the result of the detected PCP. In samples collected from SB-12, in the same area at deeper depths (22 feet bgs), PCP, 2,4,5- trichlorophenol and 2,4,6-pentachlorophenol were not detected.

In SB-7 and SB-11, TPH-Dx was detected above cleanup levels when analyzed without silica gel cleanup. TPH-Dx was not detected above cleanup levels when silica gel cleanup was used. TPH-Dx was also detected in the sample collected from SB-12A when analyzed without silica gel cleanup, but below the MTCA Method A groundwater cleanup level. The TPH-Dx concentrations were significantly reduced to either below detection limits or below cleanup levels after silica gel cleanup.

4.2.6 Former Main Plant Drain Area

According to historical investigations, there used to be a main plant storm drain located near the current dry shed building at the central portion of the Site. SB-10 was completed in the area for assessment as the feature was not previously characterized.

Soil Samples. Each sample from this area was analyzed for TPH-Dx. Select soil samples were also analyzed for dioxins/furans. Only trace concentrations of TPH-Dx were detected. None of the detected concentrations exceed cleanup levels. Dioxins were detected in the shallow interval (~3 to 4 feet deep) at SB-10. Detected concentrations were below background concentrations and cleanup levels.

Groundwater Sample. A groundwater sample was collected from SB-10 and analyzed for TPH-Dx. Concentrations of TPH-Dx were detected in the sample as estimated values, but they were below the MTCA Method A groundwater cleanup level. The TPH-Dx concentrations were significantly reduced to below detection limits after being analyzed with silica gel cleanup.

4.2.7 Current Washdown Area

The Site currently has a vehicle washdown area located at the southwestern portion of the Site. Heavy duty vehicles are frequently washed in this area. The wastewater from the washdown flows to a separator vault nearby. SB-8 was completed at a low point near the outlet to the washdown area to characterize any potential containment/releases originated from the washdown operation.

Soil Samples. Each sample from this area was analyzed for TPH-Dx. TPH-Dx was detected. None of the detected concentrations exceed cleanup levels.

Groundwater Sample. A groundwater sample was collected from SB-8 and analyzed for TPH-Dx. The detected TPH-Dx concentrations exceeded the MTCA Method A groundwater cleanup level by a factor of between 2 and 3. However, the TPH-Dx concentrations were significantly reduced to either below detection limits or below cleanup levels after silica gel cleanup.

4.2.8 Former UST Area

The Site formerly operated a UST system at the northeastern portion of the Site. The USTs were believed to be installed circa 1964 and removed in 1996, without complete documentation to Ecology. No releases or spills associated with these USTs were reported. However, no tank removal documentation was available for review. The boring (SB-13) was completed to characterize the vicinity of the former UST system.

Soil Samples. Each sample from this area was analyzed for TPH-Dx and VOCs. Concentrations of TPH-Dx and VOCs were detected below cleanup levels.

Groundwater Sample. A groundwater sample was collected from SB-13 and analyzed for TPH-Dx and VOCs. VOCs were detected at concentrations below cleanup levels. Concentrations of TPH-Dx were detected in the sample as estimated values, but they were below the MTCA Method A groundwater cleanup level. The TPH-Dx concentrations were significantly reduced after silica gel cleanup.

4.2.9 AST Area

The Site formerly operated ASTs near the northwestern entrance of the Site. This area is redeveloped with secondary containment for current AST storage. The boring (SB-14) was completed to characterize the feature and assess if any potential contamination originated from former AST operation.

Soil Samples. Each sample from this area was analyzed for TPH-Dx. Only trace concentrations of TPH-Dx were detected. None of the detected concentrations exceed cleanup levels.

Groundwater Sample. Groundwater was not encountered at this location; therefore, no groundwater sample was collected (SB-14).

4.3 Drainage Sediment Investigation

Two discrete drainage sediment samples (DR-1 near the tide gate and DR-10 near the waste mixing area) and three composite samples (West Drainage, East Drainage, South Drainage) were collected and analyzed for TPH-Dx, PAHs, PCBs, chlorinated phenols, and metals (sample DR-10 was analyzed for dioxins only). Soil dioxins/furans concentrations were reported in 2,3,7,8 TCDD TEQ. The drainage sediment results are compared to Natural Background Concentrations and Freshwater Sediment Management Standards from WAC 173-204. In Washington, Total 2,3,7,8 dioxin TEQ of 4 pg/g or less in sediment is considered below regional background concentrations.

Concentrations of TPH-Dx, PAHs, PCBs, and metals were not detected, or they were detected below cleanup levels, with one exception. Mercury was detected at a concentration of 6.65 mg/kg, which is minimally above the Washington Sediment Cleanup Objective.

In the east drainage sample, the detected dioxin Total 2,3,7,8 TEQ was 113 pg/g, which is more than 25 times greater than the 4.0 pg/g Washington sediment background concentration. All but one of the remaining samples had TEQs greater than 4 pg/g, ranging from 3.22 to 7.65 pg/g, significantly lower than the east drainage sample. Discrete sample DR-10 was the only sample with a TEQ less than the 4.0 pg/g Washington sediment background concentration.

5.0 Conclusions

TPH-Dx is widely detected at the site. However, based on the analyses completed with and without silica gel cleanup of TPH in groundwater, TPH-Dx concentrations are largely biased high as a result of biogenic compounds present from degrading wood product residuals (chips, sawdust, etc.). The available information indicates that TPH-Dx (diesel and oil range petroleum hydrocarbons) do not represent a risk at the site.

Chlorinated phenols, PCBs, VOCs, and metals, when present in any media, were largely below cleanup levels. Exceptions include:

- PCP was detected in a single shallow groundwater sample at SB-12A (near the former dip tank), but not in adjacent sample SB-11, collected from deeper intervals.
- Mercury within the East Drainage sample.
- Concentrations of arsenic in Terracon borings B-1 and B-2.

The available information indicates that sources of chlorinated phenols, PCBs, VOCs, and metals are not present at the site.

Dioxin concentrations in soil and drainage sediment appear to be the most significant environmental condition at the site. Dioxin results from the 2018 Terracon Phase I ESA and the 2021 Phase II ESA are summarized on Figures 7 and 8.

Soil. In soil, concentrations of dioxins across the facility are largely below background concentrations and cleanup levels. Dioxin concentrations at Terracon sample B5-2.5, near the former fire pond, exceeded the background concentration and detected concentrations from the 2021 Phase II ESA at SS-1 and SS-2 exceed MTCA Method B cleanup levels. SS-3, in this same area, exceeds the background concentration.

Sediment. The east drainage formerly received the majority of the facility stormwater runoff, so it is not unexpected that dioxin concentrations were highest in this location. Sediment remediation was completed in 2003 in the east drainage, indicating the worst material may have already been removed. Dioxins are the primary issue, and mercury concentrations in the East Drainage should also be considered. The other drainage sediment data collected (TPH, PAHs, PCBs, other metals) do not indicate adverse conditions under Washington Sediment Management standards.

5.1 Recommendations

Soil, groundwater, and drainage sediment contain wood waste and residuals that interfere with TPH analysis. Future chemical analysis should continue to use silica gel cleanup for an accurate representation of the TPH that is present.

While concentrations of TPH and VOCs were below cleanup levels at the former UST area, the detected concentrations of petroleum in groundwater are a release from a UST system that is reportable under Washington Administrative Code (WAC) 173-340. Requirements for UST decommissioning in Washington include confirmation sampling and groundwater characterization (when groundwater is impacted). These requirements have not been met and are should be completed in order for the site to be in compliance with UST regulations.

Based on the 2018 Terracon investigation, an arsenic release was reported based on detected concentration of arsenic above MTCA Method A cleanup levels. Sampling completed in this area during this Phase II ESA did not detect arsenic at concentrations above cleanup levels. Soil and groundwater sampling should be completed in order to verify if this was an actual release, or the result of variability in arsenic concentrations.

The single location where PCP was detected in groundwater at the former dip tank (SB-11) does not appear to represent a source of contamination. In a deeper groundwater sample (SB-12) collected within the area of the former dip tank and adjacent to SB-11, PCP was not detected. The data indicate that variability due to turbidity likely bias the sample and PCP was not detected in the deeper groundwater sample at SB-12. Groundwater samples collected in 1998 at the dip tank did not detect PCP. Together, these data suggest a source of PCP is not present at the former dip tank area. Additional sampling at the former dip tank is not recommended at this time.

Concentrations of dioxins near the waste mixing donut are present above background concentrations and samples SS-1 and SS-2 exceed MTCA Method B cleanup levels. Dioxin concentrations in sediment sample DR-10 indicate

that the south drainage may not have been impacted by the detected concentrations of dioxins. The detected concentrations of dioxins near SS-1 and SS-3 require further evaluation, including determining the extent of dioxins in this area and risk assessment.

Concentrations of dioxins in all but one drainage sample exceeded the sediment background concentration. The discrete sample collected from the east drainage (DR-10) is the only drainage sediment sample with detected concentrations below background concentrations. These concentrations require further evaluation. Sediment cleanup levels are not promulgated for dioxins. Remedial decision making is based on ecological risk assessment using site-specific bioassay. Detailed characterization of the drainages to determine the extent of dioxins in the drainages and ecological risk assessment should be completed.

6.0 References

- Apex Companies, LLC (Apex), 2021. *Draft Phase I Environmental Site Assessment, Buse Timber & Sales, 3812 28th Place Northeast, Everett, WA 98201*. September 14, 2021.
- Washington Department of Ecology (Ecology), 1990. *Preliminary Assessment Report, Buse Timber & Sales, Inc., Everett, Washington*. October 1990.
- Exponent, 1998. *Draft Phase II Environmental Site Assessment, Buse Timber & Sales, Everett, Washington*. August 21, 1998.
- Exponent, 2010. *Buse Timber and Sales Phase II Update, Buse Timber & Sales, Everett, Washington*. December 6, 2010.
- Minard, J.P., 1985. U.S. Geological Survey Miscellaneous Field Studies Map MF-1743, scale 1:24,000. Geologic map of the Marysville quadrangle, Snohomish County, Washington. 1985.
- Terracon Consultants, Inc. (Terracon), 2018a. *Phase I Environmental Site Assessment, Buse Timber & Sales, 3812 28th Place Northeast, Everett, Washington 98201*. June 20, 2018.
- Terracon, 2018b. *Limited Site Investigation, Buse Timber & Sales, 3812 28th Place Northeast, Everett, Washington 98201*. September 17, 2018.
- URS Consultants, Inc. (URS), 1994. *Screening Site Inspection Report, Buse Timber & Sales, Everett, Washington*. August 19, 1994.

Table 1 - Soil Results: TPH
Buse Timber & Sales
Everett, Washington

Area	Sample Location ID	Depth (feet)	Date	Total Petroleum Hydrocarbons (TPH) by NWTPH-Dx with Silica Gel Cleanup	
				Diesel Range Organics	Residual Range Organics
				Concentrations in mg/kg	
MTCA Method A Cleanup Level				2,000	2,000
Vehicle Maintenance	SB-1(0-5)	2-3	07/01/2021	4.51 J	38.1
	SB-1(5-10)	6-7	07/01/2021	8.79 J	67.3
Former Log Pond Fill	SB-2(0-5)	4-5	07/01/2021	<4.80	<12.0
	SB-2(5-10)	8-9	07/01/2021	<5.88	<14.7
	SB-3(0-5)	3-4	07/01/2021	<4.97	<12.4
	SB-3(5-10)	8.5-9.5	07/01/2021	<6.68	5.61 J
Current Lube Building/Mechanics Shop Area	SB-4(0-5)	3-4	07/01/2021	<4.94	<12.3
	SB-4(5-10)	6-7	07/01/2021	<5.01	<12.5
	SB-5(0-5)	2.5-3.5	07/01/2021	23.5	56.5
	SB-5(5-10)	6-7	07/01/2021	10.7	58.6
Hog Fuel Mixing Area	SB-6(0-5)	3-4	07/01/2021	<5.77	8.72 J
	SB-6(5-10)	8-9	07/01/2021	<7.29	<18.2
Current Dip Tank	SB-7(0-5)	3-4	06/30/2021	<7.05	6.19 J
	SB-7(5-10)	6-7	06/30/2021	<8.52	<21.3
Current Washdown Area	SB-8(0-5)	2-3	06/30/2021	38.5	92.4
	SB-8(5-10)	8-9	06/30/2021	<6.28	<15.7
Former Log Pond Fill/Current AST Area	SB-9(0-5)	3-4	07/01/2021	6.74 J	28.2
	SB-9(5-10)	8-9	07/01/2021	3.83 J	31.3
Former Main Plant Drain	SB-10(0-5)	3-4	06/30/2021	<6.09	5.51 J
	SB-10(5-10)	6.5-7.5	06/30/2021	5.93 J	49.9 J
Former PCP Dip Tank	SB-11(0-5)	3-4	06/30/2021	<6.99	<17.5
	SB-11(5-10)	7-8	06/30/2021	<7.75	<19.4
	SB-12(0-5)	3.5-4.5	06/30/2021	64.6	119
	SB-12(5-10)	8-9	06/30/2021	6.53 J	39.7
Former UST Area	SB-13(0-5)	3-4	06/30/2021	<6.33	6.10 J
	SB-13(5-10)	6.5-7.5	06/30/2021	6.06 J	37.3
	SB-13(10-15)	13.5-14.5	06/30/2021	<6.27	<15.7
Former AST Area	SB-14(0-5)	3-4	06/30/2021	<5.62	11.4 J
	SB-14(5-10)	7-8	06/30/2021	3.29 J	13.9 J
Waste Mixing Doughnut	SS-1	--	07/01/2021	13.2	175
	SS-2	--	07/01/2021	10.0	101
	SS-3	--	07/01/2021	16.7	151

Notes:

1. mg/kg = Milligrams per kilogram.
2. Bold values indicate the compound was detected above method detection limits.
3. < = Analyte was not detected above the reporting limit shown.
4. Shaded results exceed the Model Toxics Control Act (MTCA) Method A for unrestricted land use.
5. Soil cleanup levels from the MTCA Method A for unrestricted land use chapter 173-340 WAC (February 2021 update).
6. -- = Value not available.
7. J = Result is estimated.

Table 2 - Soil Results: VOCs
Buse Timber & Sales
Everett, Washington

	Vehicle Maintenance	Former Log Pond Fill	Current Lube Building/Mechanics Shop Area			Hog Fuel Mixing Area		Former Log Pond Fill/Current AST Area		Former UST Area	MTCA Method A Cleanup Level
Sample Location ID:	SB-1(0-5)	SB-2(0-5)	SB-4(0-5)	SB-4(5-10)	SB-5(5-10)	SB-6(0-5)	SB-6(5-10)	SB-9(0-5)	SB-9(5-10)	SB-13(5-10)	
Depth (feet):	2-3	4-5	3-4	6-7	6-7	3-4	8-9	3-4	8-9	6.5-7.5	
Date:	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	06/30/2021	
Volatile Organic Compounds (VOCs) by 8260D in mg/kg											
Acetone	0.312	<0.0710	<0.0738	<0.0770	0.0953	0.186	0.345	0.143	0.227	<0.263	--
Acrylonitrile	<0.0284	<0.0178	<0.0185	<0.0193	<0.0165	<0.0249	<0.0345	<0.0183	<0.0216	<0.0658	--
Benzene	0.00566	<0.00142	0.00107 J	0.00157	<0.00132	0.00128 J	<0.00276	0.00333	0.00216	<0.00527	0.03
Bromobenzene	<0.0284	<0.0178	<0.0185	<0.0193	<0.0165	<0.0249	<0.0345	<0.0183	<0.0216	<0.0658	--
Bromodichloromethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
Bromodifluoromethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
Bromomethane	<0.0284	<0.0178	<0.0185	<0.0193	<0.0165	<0.0249	<0.0345	<0.0183	<0.0216	<0.0658	--
n-Butylbenzene	<0.0284	<0.0178	<0.0185	<0.0193	<0.0165	<0.0249	<0.0345	<0.0183	<0.0216	<0.0658	UJ
sec-Butylbenzene	<0.0284	<0.0178	<0.0185	<0.0193	<0.0165	<0.0249	<0.0345	<0.0183	<0.0216	<0.0658	--
tert-Butylbenzene	<0.0114	<0.00710	<0.00738	<0.00770	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
Carbon Tetrachloride	<0.0114	<0.00710	<0.00738	<0.00770	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
Chlorobenzene	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
Chlorodibromomethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
Chloroethane	<0.0114	<0.00710	<0.00738	<0.00770	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
Chloroform	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
Chloromethane	<0.0284	<0.0178	<0.0185	<0.0193	<0.0165	<0.0249	<0.0345	<0.0183	<0.0216	<0.0658	--
2-Chlorotoluene	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
4-Chlorotoluene	<0.0114	<0.00710	<0.00738	<0.00770	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
1,2-Dibromo-3-Chloropropane	<0.0568	<0.0355	<0.0369	<0.0385	<0.0330	<0.0499	<0.0689	<0.0365	<0.0433	<0.132	--
1,2-Dibromoethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	0.01
Dibromomethane	<0.0114	<0.00710	<0.00738	<0.00770	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
1,2-Dichlorobenzene	<0.0114	<0.00710	<0.00738	<0.00770	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
1,3-Dichlorobenzene	<0.0114	<0.00710	<0.00738	<0.00770	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
1,4-Dichlorobenzene	<0.0114	<0.00710	<0.00738	<0.00770	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
Dichlorodifluoromethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
1,1-Dichloroethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
1,2-Dichloroethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
1,1-Dichloroethene	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
cis-1,2-Dichloroethene	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
trans-1,2-Dichloroethene	<0.0114	<0.00710	<0.00738	<0.00770	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
1,2-Dichloropropane	<0.0114	<0.00710	<0.00738	<0.00770	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
1,1-Dichloropropene	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
1,3-Dichloropropane	<0.0114	<0.00710	<0.00738	<0.00770	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
cis-1,3-Dichloropropene	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
trans-1,3-Dichloropropene	<0.0114	<0.00710	<0.00738	<0.00770	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
2,2-Dichloropropane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
di-Isopropyl Ether	<0.00227	<0.00142	<0.00148	<0.00154	<0.00132	<0.00199	<0.00276	<0.00146	<0.00173	<0.00527	--
Ethylbenzene	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	0.0291	<0.00433	<0.0132	6
Hexachloro-1,3-Butadiene	<0.0568	<0.0355	<0.0369	<0.0385	<0.0330	<0.0499	<0.0689	<0.0365	<0.0433	<0.132	UJ
Isopropylbenzene	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	0.0024 J	<0.00433	<0.0132	--
p-Isopropyltoluene	<0.0114	0.00721	<0.00738	0.00644 J	0.0393	<0.00997	<0.0138	0.0849	0.00717 J	<0.0263	--
2-Butanone (MEK)	0.387 J+	0.158 J+	<0.148	0.202 J+	0.179 J+	0.249 J+	0.447 J+	0.209 J+	0.270 J+	0.374 J+	--
Methylene Chloride	<0.0568	<0.0355	<0.0369	<0.0385	<0.0330	<0.0499	<0.0689	<0.0365	<0.0433	<0.132	0.02
4-Methyl-2-Pentanone (MIBK)	<0.0568	<0.0355	<0.0369	<0.0385	<0.0330	<0.0499	<0.0689	<0.0365	<0.0433	<0.132	--
Methyl tert-Butyl Ether	<0.00227	<0.00142	<0.00148	<0.00154	<0.00132	<0.00199	<0.00276	<0.00146	<0.00173	<0.00527	0.1
Naphthalene	<0.0284	<0.0178	<0.0185	<0.0193	<0.0165	<0.0249	<0.0345	<0.0183	<0.0216	<0.0658	5
n-Propylbenzene	<0.0114	<0.00710	0.00226 J	0.00305 J	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
Styrene	<0.0284	<0.0178	<0.0185	<0.0193	<0.0165	<0.0249	<0.0345	<0.0183	<0.0216	<0.0658	--
1,1,1,2-Tetrachloroethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
1,1,2,2-Tetrachloroethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
1,1,2-Trichlorotrifluoroethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
Tetrachloroethene	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	0.1
Toluene	0.0157	0.00757	0.00673 J	0.0411	0.0202	0.0477	0.00783 J	0.0447	0.0249	<0.0263	7
1,2,3-Trichlorobenzene	<0.0284	<0.0178	<0.0185	<0.0193	<0.0165	<0.0249	<0.0345	<0.0183	<0.0216	<0.0658	UJ
1,2,4-Trichlorobenzene	<0.0284	<0.0178	<0.0185	<0.0193	<0.0165	<0.0249	<0.0345	<0.0183	<0.0216	<0.0658	UJ
1,1,1-Trichloroethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	2
1,1,2-Trichloroethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
Trichloroethene	<0.00227	<0.00142	<0.00148	<0.00154	<0.00132	<0.00199	<0.00276	<0.00146	<0.00173	<0.00527	0.03
Trichlorofluoromethane	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
1,2,3-Trichloropropane	<0.0284	<0.0178	<0.0185	<0.0193	<0.0165	<0.0249	<0.0345	<0.0183	<0.0216	<0.0658	--
1,2,4-Trimethylbenzene	<0.0114	<0.00710	<0.00738	0.0166	0.00405 J	<0.00997	<0.0138	0.00387 J	<0.00866	<0.0263	--
1,2,3-Trimethylbenzene	0.0038 J	<0.00710	<0.00738	0.00314 J	<0.00659	<0.00997	0.00516 J	<0.00730	0.00327 J	<0.0263	--
1,3,5-Trimethylbenzene	<0.0114	<0.00710	<0.00738	0.00339 J	<0.00659	<0.00997	<0.0138	<0.00730	<0.00866	<0.0263	--
Vinyl Chloride	<0.00568	<0.00355	<0.00369	<0.00385	<0.00330	<0.00499	<0.00689	<0.00365	<0.00433	<0.0132	--
Xylenes, Total	<0.0148	<0.00923	0.00638 J	0.0345	0.00510 J	0.00299 J	<0.0179	<0.00949	0.00279 J	<0.0342	9

Notes:

- mg/kg = Milligrams per kilogram.
- Bold values indicate the compound was detected above method detection limits.
- < = Analyte was not detected above the reporting limit shown.
- Shaded results exceed the Model Toxics Control Act (MTCA) Method A for unrestricted land use.
- Soil cleanup levels from the MTCA Method A for unrestricted land use chapter 173-340 WAC (February 2021 update).
- = Value not available.
- J = Result is estimated.
- UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
- J+ = Result is estimated and may be biased high.

Table 3 - Soil Results: Chlorinated Phenols and Metals
Buse Timber & Sales
Everett, Washington

	Vehicle Maintenance	Former Log Pond Fill		Current Dip Tank		Former Log Pond Fill/Current AST Area	Former PCP Dip Tank						Waste Mixing Doughnut			Puget Sound Background Metals Concentration	MTCA Method A Cleanup Level
Sample Location ID:	SB-1(0-5)	SB-2(0-5)	SB-3(5-10)	SB-7(0-5)	SB-7(5-10)	SB-9(5-10)	SB-11(0-5)	SB-11(5-10)	SB-12(0-5)	SB-12(5-10)	SB-12A(0-5)	SB-12A(5-10)	SS-1	SS-2	SS-3		
Depth (feet):	2-3	4-5	8.5-9.5	3-4	6-7	8-9	3-4	7-8	3.5-4.5	8-9	3.5-4.5	8-9	--	--	--		
Date:	07/01/2021	07/01/2021	07/01/2021	06/30/2021	06/30/2021	07/01/2021	06/30/2021	06/30/2021	06/30/2021	06/30/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021		
Chlorinated Phenols by EPA Method 8270E in mg/kg																	
4-Chloro-3-Methylphenol	<1.08	<0.399	<1.11	<0.587	<0.709	<0.445	<0.582	<0.645	<0.588	<0.675	<1.41	<0.670	<1.31	<0.690	<1.17	--	--
2-Chlorophenol	<1.08	<0.399	<1.11	<0.587	<0.709	<0.445	<0.582	<0.645	<0.588	<0.675	<1.41	<0.670	<1.31	<0.690	<1.17	--	--
2,4-Dichlorophenol	<1.08	<0.399	<1.11	<0.587	<0.709	<0.445	<0.582	<0.645	<0.588	<0.675	<1.41	<0.670	<1.31	<0.690	<1.17	--	--
Pentachlorophenol	<1.08	<0.399	<1.11	<0.587	<0.709	<0.445	<0.582	<0.645	<0.588	<0.675	<1.41	<0.670	<1.31	<0.690	<1.17	--	--
2,4,6-Trichlorophenol	<1.08	<0.399	<1.11	<0.587	<0.709	<0.445	<0.582	<0.645	<0.588	<0.675	<1.41	<0.670	<1.31	<0.690	<1.17	--	--
2,4,5-Trichlorophenol	<1.08	<0.399	<1.11	<0.587	<0.709	<0.445	<0.582	<0.645	<0.588	<0.675	<1.41	<0.670	<1.31	<0.690	<1.17	--	--
Metals by EPA Method 6020B and 7471B in mg/kg																	
Arsenic	18.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7	20
Barium	51.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	<1.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	2
Chromium	66.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	48	2000
Lead	10.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24	250
Selenium	0.809 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	<0.808	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.0765	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.07	2

Notes:

1. mg/kg = Milligrams per kilogram.
2. pg/g = Picograms per gram.
3. Bold values indicate the compound was detected above method detection limits.
4. < = Analyte was not detected above the reporting limit shown.
5. Shaded results exceed the Model Toxics Control Act (MTCA) Method A for unrestricted land use.
6. Soil cleanup levels from the MTCA Method A for unrestricted land use chapter 173-340 WAC (February 2021 update).
7. -- = Value not available.
8. J = Result is estimated.

Table 4 - Soil Results: Dioxins/Furans
Buse Timber & Sales
Everett, Washington

	Former Log Pond Fill		Current Lube Building/Mechanics Shop Area		Former Main Plant Drain	Former PCP Dip Tank		Waste Mixing Doughnut				
Sample Location ID:	SB-2(0-5)	SB-3(5-10)	SB-4(0-5)	SB-5(0-5)	SB-10(0-5)	SB-11(0-5)	SB-12(0-5)	SS-1	SS-2	SS-3	Natural Background Dioxins/Furans	MTCA Method B Cleanup Level
Depth (feet):	4-5	8.5-9.5	3-4	2.5-3.5	3-4	3-4	3.5-4.5	--	--	--		
Date:	07/01/2021	07/01/2021	07/01/2021	07/01/2021	06/30/2021	06/30/2021	06/30/2021	07/01/2021	07/01/2021	07/01/2021		
<i>Dioxins/Furans by EPA Method 8290A in pg/g</i>												
2,3,7,8-TCDD	<0.12	<0.11	<0.12	<0.10	<0.13	0.13 J	<0.12	0.151 J	<0.12	0.093 J	--	--
1,2,3,7,8-PeCDD	<0.12	<0.12	<0.10	0.33 J	<0.13	0.38 J	0.3 J	2.25 J	2.26 J	1.28 J	--	--
1,2,3,4,7,8-HxCDD	<0.11	<0.14	<0.13	0.28 J	0.14 J	0.28 J	0.29 J	2.70 J	3.45 J	1.25 J	--	--
1,2,3,6,7,8-HxCDD	0.618 J	0.14 J	0.12 J	1.28 J	<0.17	4.53 J	0.46 J	30.2	34.7	14.5	--	--
1,2,3,7,8,9-HxCDD	0.352 J	0.23 J	<0.11	0.59 J	0.29 J	0.72 J	0.42 J	9.09	6.21	4.12 J	--	--
1,2,3,4,6,7,8-HpCDD	3.82 J	2.79 J	1.56 J	8.58	5.48	35.7	5.49	217	335	106	--	--
OCDD	16.7	34.7	14.3	62.1	176	121	48.1	1140	1370	441	--	--
2,3,7,8-TCDF	0.27 J	<0.11	0.17 J	0.61 J	<0.29	1.96 J	1.91 J	1.34 J	2.72	1.25 J	--	--
1,2,3,7,8-PeCDF	<0.13	<0.12	<0.12	0.25 J	<0.13	0.52 J	0.43 J	0.929 J	4.78 J	1.57 J	--	--
2,3,4,7,8-PeCDF	<0.12	<0.11	<0.11	0.46 J	0.13 J	0.72 J	0.74 J	1.09 J	4.3 J	1.39 J	--	--
1,2,3,4,7,8-HxCDF	0.12 J	<0.11	<0.12	0.31 J	<0.11	0.75 J	0.37 J	3.89 J	19.1	<5.7 UK	--	--
1,2,3,6,7,8-HxCDF	<0.092	<0.094	<0.11	0.33 J	<0.10	0.67 J	0.3 J	4.89 J	9.95	3.86 J	--	--
2,3,4,6,7,8-HxCDF	<0.096	<0.099	<0.11	0.45 J	<0.10	0.747 J	0.32 J	<3.8 UK	5.98	<2.3 UK	--	--
1,2,3,7,8,9-HxCDF	<0.11	<0.11	<0.13	0.19 J	<0.12	<0.11	<0.14	0.141 J	1.33 J	0.44 J	--	--
1,2,3,4,6,7,8-HpCDF	2.33 J	0.124 J	0.32 J	3.07 J	0.997 J	35.4	1.14 J	106	248	64.5	--	--
1,2,3,4,7,8,9-HpCDF	<0.12	<0.12	<0.13	0.27 J	0.16 J	0.81 J	0.12 J	3.92 J	10.3	2.63 J	--	--
OCDF	1.89 J	0.14 J	0.98 J	3.81 J	72.2	32.3	2.63 J	123	197	49.8	--	--
Total HxCDD	3.63 J	1.93 J	0.61 J	5.79	2.61 J	20.5	4.17 J	188	131	85.2	--	160
Total TEQ (ND = 1/2 DL)	0.364	0.244	0.217	1.07	0.399	2.48	1.09	11.8	18.5	6.66	5.2	13

Notes:

1. pg/g = Picograms per gram.
2. Bold values indicate the compound was detected above method detection limits.
3. < = Analyte was not detected above the detection limit shown.
4. Shaded results exceed the Model Toxics Control Act (MTCA) Method B Cancer soil cleanup level and the natural background concentration for dioxins/furans.
5. Soil cleanup levels from the MTCA Method B Cancer 173-340 WAC (February 2021 update).
6. Natural background concentration for dioxins/furans from Washington Ecology's technical memorandum *Natural Background for Dioxins/Furans in WA Soil* (August 2010).
7. -- = Value not available.
8. J = Result is estimated.
9. UK = Estimated maximum possible concentration (EMPC). Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

Table 5 - Groundwater Results
Buse Timber & Sales
Everett, Washington

	Vehicle Maintenance	Former Log Pond Fill	Current Lube Building/Mechanics Shop Area		Hog Fuel Mixing Area	Current Dip Tank	Current Washdown Area	Former Log Pond Fill/Current AST Area	Former Main Plant Drain	Former PCP Dip Tank		Former UST Area	MTCA Method A Cleanup Level	
	SB-1W	SB-2W	SB-3W	SB-4W	SB-5W	SB-6W	SB-7W	SB-8W	SB-9W	SB-10W	SB-11W	SB-12A-W	SB-13W	
Sample Location ID:														
Depth (feet):	15.2	12.7	12.3	6.8	6.4	11.7	9.7	2.9	21.3	16.5	6.8	22	23.5	
Date:	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	06/30/2021	07/01/2021	07/01/2021	07/01/2021	06/30/2021	07/01/2021	06/30/2021	
Total Petroleum Hydrocarbons (TPH) by NWTPH-Dx in µg/L														
Diesel Range Organics	208	1110	541	983	1450	860 J-	2840 J+	1060	76.6 J	125 J	1460	152 J	122 J	500
Residual Range Organics	246 J	1450	884	1250	1620	673 J-	2350	1440	<250	248 J	1740	222 J	<250	500
Total Petroleum Hydrocarbons (TPH) by NWTPH-Dx with Silica Gel Cleanup in µg/L														
Diesel Range Organics	<200	163 J	288	195 J	127 J	92.5 J-	140 J	91.8 J	<200	<200	196 J	<200	<200	500
Residual Range Organics	<250	<250	148 J	109 J	<250	<250 UJ	<250	<250	<250	<250	165 J	<250	<250	500
Chlorinated Phenols by EPA Method 8270E in µg/L														
4-Chloro-3-Methylphenol	<10.0	<10.0	<10.0	--	--	--	<10.0 UJ	--	<10.0	--	<10.0 UJ	<10.0	--	--
2-Chlorophenol	<10.0	<10.0	<10.0	--	--	--	<10.0 UJ	--	<10.0	--	<10.0 UJ	<10.0	--	--
2,4-Dichlorophenol	<10.0	<10.0	<10.0	--	--	--	<10.0 UJ	--	<10.0	--	<10.0 UJ	<10.0	--	--
Pentachlorophenol	<10.0	<10.0	<10.0	--	--	--	<10.0 UJ	--	<10.0	--	58.4 J	<10.0	--	--
2,4,6-Trichlorophenol	<10.0	<10.0	<10.0	--	--	--	<10.0 UJ	--	<10.0	--	0.869 J	<10.0	--	--
2,4,5-Trichlorophenol	<10.0	<10.0	<10.0	--	--	--	<10.0 UJ	--	<10.0	--	2.87 J	<10.0	--	--
Volatile Organic Compounds (VOCs) by 8260D in µg/L														
Acetone	<1.00 UJ	--	--	--	--	--	--	--	--	--	--	--	3.53 J-	--
Acrylonitrile	<0.500	--	--	--	--	--	--	--	--	--	--	--	<0.500	--
Benzene	<0.0400	--	--	--	--	--	--	--	--	--	--	--	0.05	5
Bromobenzene	<0.500	--	--	--	--	--	--	--	--	--	--	--	<0.500	--
Bromodichloromethane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
Bromoform	<1.00	--	--	--	--	--	--	--	--	--	--	--	<1.00	--
Bromomethane	<0.500	--	--	--	--	--	--	--	--	--	--	--	<0.500	--
n-Butylbenzene	<0.500	--	--	--	--	--	--	--	--	--	--	--	<0.500	--
sec-Butylbenzene	<0.500	--	--	--	--	--	--	--	--	--	--	--	0.231 J	--
tert-Butylbenzene	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
Carbon Tetrachloride	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
Chlorobenzene	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
Chlorodibromomethane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
Chloroethane	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
Chloroform	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
Chloromethane	<0.500	--	--	--	--	--	--	--	--	--	--	--	<0.500	--
2-Chlorotoluene	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
4-Chlorotoluene	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
1,2-Dibromo-3-Chloropropane	<1.00	--	--	--	--	--	--	--	--	--	--	--	<1.00	--
1,2-Dibromoethane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	0.01
Dibromomethane	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
1,2-Dichlorobenzene	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
1,3-Dichlorobenzene	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
1,4-Dichlorobenzene	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
Dichlorodifluoromethane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
1,1-Dichloroethane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
1,2-Dichloroethane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	5
1,1-Dichloroethene	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
cis-1,2-Dichloroethene	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
trans-1,2-Dichloroethene	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
1,2-Dichloropropane	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
1,1-Dichloropropene	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
1,3-Dichloropropene	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
cis-1,3-Dichloropropene	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
trans-1,3-Dichloropropene	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
2,2-Dichloropropane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
di-Isopropyl Ether	<0.0400	--	--	--	--	--	--	--	--	--	--	--	<0.0400	--
Ethylbenzene	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	700
Hexachloro-1,3-Butadiene	<1.00	--	--	--	--	--	--	--	--	--	--	--	<1.00	--
Isopropylbenzene	<0.100	--	--	--	--	--	--	--	--	--	--	--	0.544	--
p-Isopropyltoluene	<0.200	--	--	--	--	--	--	--	--	--	--	--	0.193 J	--
2-Butanone (MEK)	<1.00	--	--	--	--	--	--	--	--	--	--	--	<1.00	--
Methylene Chloride	<1.00	--	--	--	--	--	--	--	--	--	--	--	<1.00	5
4-Methyl-2-Pentanone (MIBK)	<1.00	--	--	--	--	--	--	--	--	--	--	--	<1.00	--
Methyl tert-Butyl Ether	<0.0400	--	--	--	--	--	--	--	--	--	--	--	<0.0400	20
Naphthalene	<0.500	--	--	--	--	--	--	--	--	--	--	--	1.94	160
n-Propylbenzene	<0.200	--	--	--	--	--	--	--	--	--	--	--	0.766	--
Styrene	<0.500	--	--	--	--	--	--	--	--	--	--	--	<0.500	--
1,1,1,2-Tetrachloroethane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
1,1,2,2-Tetrachloroethane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
1,1,2-Trichlorotrifluoroethane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
Tetrachloroethene	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	5
Toluene	<0.200	--	--	--	--	--	--	--	--	--	--	--	0.204	1,000
1,2,3-Trichlorobenzene	<0.500	--	--	--	--	--	--	--	--	--	--	--	<0.500	--
1,2,4-Trichlorobenzene	<0.500	--	--	--	--	--	--	--	--	--	--	--	<0.500	--
1,1,1-Trichloroethane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	200
1,1,2-Trichloroethane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
Trichloroethene	<0.0400	--	--	--	--	--	--	--	--	--	--	--	<0.0400	5
Trichlorofluoromethane	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
1,2,3-Trichloropropane	<0.500	--	--	--	--	--	--	--	--	--	--	--	<0.500	--
1,2,4-Trimethylbenzene	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
1,2,3-Trimethylbenzene	<0.200	--	--	--	--	--	--	--	--	--	--	--	0.942	--
1,3,5-Trimethylbenzene	<0.200	--	--	--	--	--	--	--	--	--	--	--	0.844	--
Vinyl Chloride	<0.100	--	--	--	--	--	--	--	--	--	--	--	<0.100	0.2
Xylenes, Total	<0.260	--	--	--	--	--	--	--	--	--	--	--	0.204 J	1,000
Bromochloromethane	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
Carbon Disulfide	<0.500	--	--	--	--	--	--	--	--	--	--	--	0.587	--
trans-1,4-Dichloro-2-Butene	<0.200	--	--	--	--	--	--	--	--	--	--	--	<0.200	--
2-Hexanone	<1.00	--	--	--	--	--	--	--	--	--	--	--	<1.00	--
n-Hexane	<0.200	--	--	--	--	--	--	--	--	--	--	--	0.148 J	--
Iodomethane	<0.500	--	--	--	--	--	--	--	--	--	--	--	<0.500	--
Vinyl Acetate	<0.500	--	--	--	--	--	--	--	--	--	--	--	<0.500	--

- Notes:
- µg/L = Micrograms per liter.
 - Bold values indicate the compound was detected above method detection limits.
 - < = Analyte was not detected above the reporting limit shown.
 - Shaded results exceed the Model Toxics Control Act (MTCA) Method A cleanup level for groundwater.
 - Groundwater cleanup levels from the MTCA Method A chapter 173-340 WAC (February 2021 update).
 - = Value not available.
 - J = Result is estimated.
 - J+ = Result is estimated and may be biased high.
 - J- = Result is estimated and may be biased low.
 - UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Table 6 - Sediment Results: TPH, PAHs, PCBs, Chlorinated Phenols, and Metals
Buse Timber & Sales
Everett, Washington

	Tide Gate						
Sample Location ID:	DR-1	WEST DRAINAGE	EAST DRAINAGE	SOUTH DRAINAGE	Puget Sound Natural Background Concentrations	Freshwater Sediment Management Standards (Benthic)	
	Date:	07/02/2021	07/02/2021	07/02/2021		07/02/2021	Sediment Cleanup Objective
Total Petroleum Hydrocarbons (TPH) by NWTPH-Dx in mg/kg							
Diesel Range Organics	269	<507	454	12.9 J	--	340	510
Residual Range Organics	1460	<1270	2410	26.3 J	--	3,600	4,400
Total Petroleum Hydrocarbons (TPH) by NWTPH-Dx with Silica Gel Cleanup in mg/kg							
Diesel Range Organics	106 J	<507	305	<14.5	--	340	510
Residual Range Organics	659	<1270	1730	13.3 J	--	3,600	4,400
Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270E-SIM in mg/kg							
Anthracene	<0.344	<0.793	<0.557	<0.349	--	--	--
Acenaphthene	<0.344	<0.793	<0.557	<0.349	--	--	--
Acenaphthylene	<0.344	<0.793	<0.557	<0.349	--	--	--
Benzo(a)anthracene	<0.344	<0.793	<0.557	<0.349	--	--	--
Benzo(a)pyrene	<0.344	<0.793	<0.557	<0.349	--	--	--
Benzo(b)fluoranthene	<0.344	<0.793	0.164 J	<0.349	--	--	--
Benzo(g,h,i)perylene	<0.344	<0.793	0.308 J	<0.349	--	--	--
Benzo(k)fluoranthene	<0.344	<0.793	<0.557	<0.349	--	--	--
Chrysene	<0.344	<0.793	<0.557	<0.349	--	--	--
Dibenz(a,h)anthracene	<0.344	<0.793	<0.557	<0.349	--	--	--
Fluoranthene	<0.344	<0.793	0.259 J	<0.349	--	--	--
Fluorene	<0.344	<0.793	<0.557	<0.349	--	--	--
Indeno(1,2,3-cd)pyrene	<0.344	<0.793	<0.557	<0.349	--	--	--
Naphthalene	<1.15	<2.64	<1.86	<1.16	--	--	--
Phenanthrene	<0.344	<0.793	0.31 J	<0.349	--	--	--
Pyrene	<0.344	<0.793	0.637	<0.349	--	--	--
1-Methylnaphthalene	<1.15	<2.64	<1.86	<1.16	--	--	--
2-Methylnaphthalene	<1.15	<2.64	<1.86	<1.16	--	--	--
2-Chloronaphthalene	<1.15	<2.64	<1.86	<1.16	--	--	--
Total PAHs	<1.15	<2.64	1.68	<1.16	--	17	30
Polychlorinated Biphenyls (PCBs) by EPA Method 8082A in mg/kg							
PCB 1016	<0.128	<0.301	<3.22	<1.90	--	--	--
PCB 1221	<0.128	<0.301	<3.22	<1.90	--	--	--
PCB 1232	<0.128	<0.301	<3.22	<1.90	--	--	--
PCB 1242	<0.128	<0.301	<3.22	<1.90	--	--	--
PCB 1248	<0.0644	<0.151	<1.61	<0.954	--	--	--
PCB 1254	<0.0644	<0.151	<1.61	<0.954	--	--	--
PCB 1260	<0.0644	<0.151	<1.61	<0.954	--	--	--
Total PCBs	<0.128	<0.301	<3.22	<1.90	--	0.11	2.5
Chlorinated Phenols by EPA Method 8270E in mg/kg							
4-Chloro-3-Methylphenol	<34.4	<44.3	<60.3	<37.9	--	--	--
2-Chlorophenol	<34.4	<44.3	<60.3	<37.9	--	--	--
2,4-Dichlorophenol	<34.4	<44.3	<60.3	<37.9	--	--	--
Pentachlorophenol	<34.4	<44.3	<60.3	<37.9	--	1.2	>1.2
2,4,6-Trichlorophenol	<34.4	<44.3	<60.3	<37.9	--	--	--
2,4,5-Trichlorophenol	<34.4	<44.3	<60.3	<37.9	--	--	--
Metals by EPA Method 6020B and 7471B in mg/kg							
Arsenic	16.0	24.2 J+	19.3	15.7	11	14	120
Barium	114	277	81.2	148	--	--	--
Cadmium	<3.75	<8.87	1.43 J	0.345 J	0.8	2.1	5.4
Chromium	60.5	37.4 J	54.7	66.2	62	72	88
Copper	50.3	89.1	90.3	54.0	45	400	1200
Lead	12.0	13.8 J+	30.9	20.9	21	360	>1300
Nickel	48.7	41.7	63.1	52.3	50	26	110
Selenium	<9.36	<22.2	<16.6	0.88 J	--	11	>20
Silver	<1.87	<4.43	<3.32	<1.81	0.24	0.57	1.7
Zinc	124	156 J	702	134	93	3200	>4200
Mercury	0.110 J	0.170 J	0.665	0.130 J	0.2	0.66	0.8

Notes:

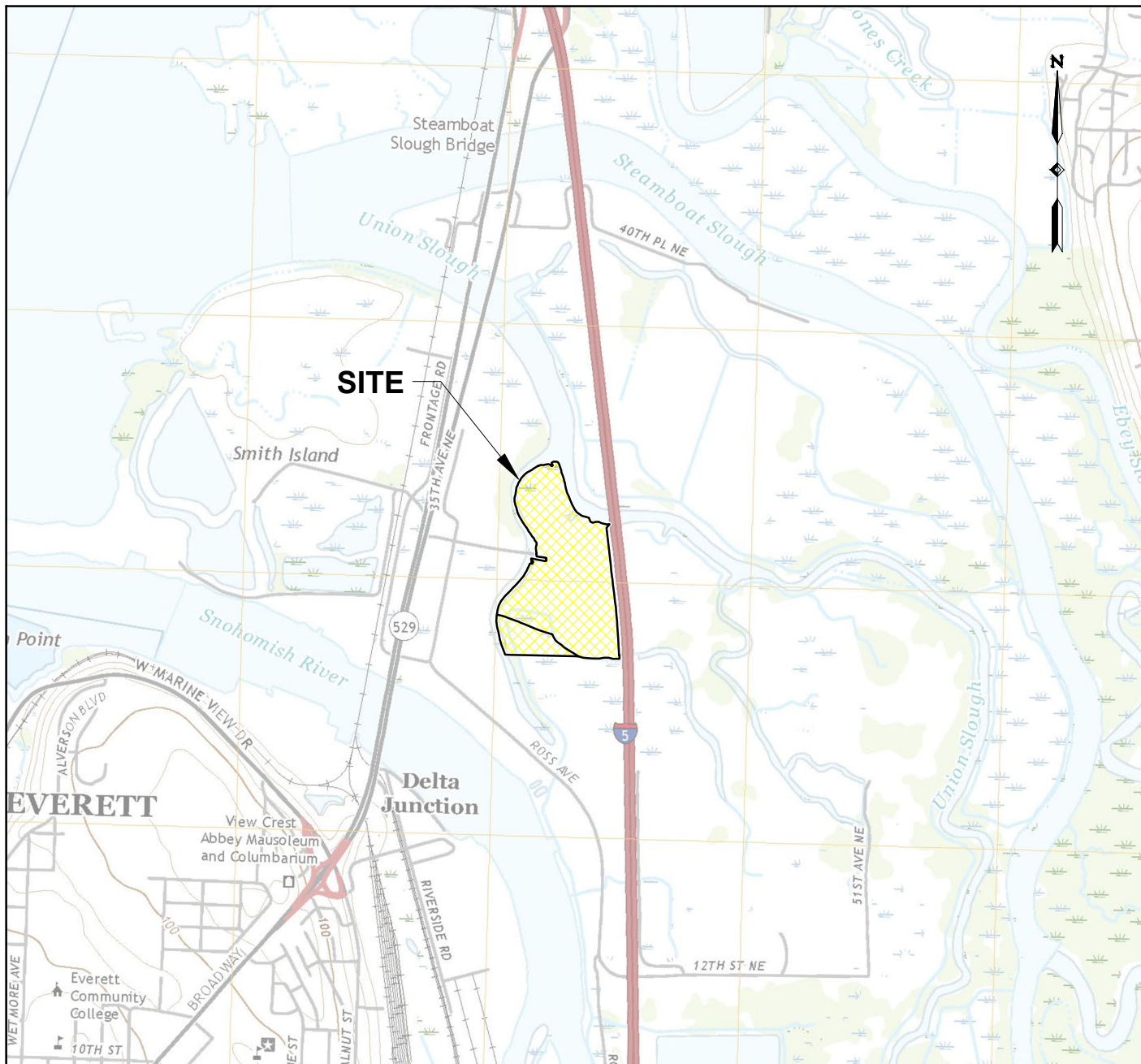
1. mg/kg = Milligrams per kilogram.
2. Bold values indicate the compound was detected above method detection limits.
3. < = Analyte was not detected above the reporting limit shown.
4. Shaded results exceed the Sediment Management Standards.
5. Natural Background Concentrations and Sediment Management Standards from WAC 173-204 and Washington Ecology's *Sediment Cleanup User's Manual* (December 2019 update).
6. -- = Value not available.
7. J = Result is estimated.
8. J+ = Result is estimated and may be biased high.

Table 7 - Sediment Results: Dioxins/Furans
Buse Timber & Sales
Everett, Washington

	Tide Gate	South Drainage					
Sample Location ID:	DR-1	DR-10	WEST DRAINAGE	EAST DRAINAGE	SOUTH DRAINAGE	Puget Sound Natural Background Dioxins/Furans	MTCA Method B Cleanup Level
Date:	07/02/2021	07/02/2021	07/02/2021	07/02/2021	07/02/2021		
Dioxins/Furans by EPA Method 8290A in pg/g							
2,3,7,8-TCDD	0.13 J	0.21 J	<0.29	1.27 J	0.173 J	--	--
1,2,3,7,8-PeCDD	1.33 J	0.95 J	0.97 J	16.3	0.98 J	--	--
1,2,3,4,7,8-HxCDD	1.37 J	1.05 J	1.12 J	18.3	1.20 J	--	--
1,2,3,6,7,8-HxCDD	17.6	3.48 J	9.78 J	237	6.98	--	--
1,2,3,7,8,9-HxCDD	4.40 J	2.54 J	3.28 J	64.9	3.14 J	--	--
1,2,3,4,6,7,8-HpCDD	136	43.6	88.2	2130	74.1	--	--
OCDD	740	284	382	11800	378	--	--
2,3,7,8-TCDF	1.67 J	3.79	1.63 J	16.3	2.66	--	--
1,2,3,7,8-PeCDF	0.60 J	0.89 J	0.71 J	6.84	0.74 J	--	--
2,3,4,7,8-PeCDF	1.00 J	<1.1 UK	0.88 J	10.1	1.02 J	--	--
1,2,3,4,7,8-HxCDF	2.28 J	1.32 J	2.12 J	36.0	1.84 J	--	--
1,2,3,6,7,8-HxCDF	2.90 J	0.838 J	2.18 J	47.3	1.58 J	--	--
2,3,4,6,7,8-HxCDF	2.81 J	0.837 J	2.12 J	34.3	1.60 J	--	--
1,2,3,7,8,9-HxCDF	0.13 J	<0.098	0.35 J	2.28 J	0.14 J	--	--
1,2,3,4,6,7,8-HpCDF	91.5	11.9	69.5	2030	37.2	--	--
1,2,3,4,7,8,9-HpCDF	3.25 J	0.617 J	2.56 J	53.9	1.34 J	--	--
OCDF	95.2	17.4	59.6	2120	35.8	--	--
Total TEQ (ND = 1/2 DL)	7.65	3.39	5.39	113	4.65	4	13
Total HxCDD	95.6	34.9	57.4	1550	54.1	--	160

Notes:

1. pg/g = Picograms per gram.
2. Bold values indicate the compound was detected above method detection limits.
3. < = Analyte was not detected above the detection limit shown.
4. Shaded results exceed the Model Toxics Control Act (MTCA) Method B Cancer soil cleanup level and the natural background concentration for dioxins/furans.
5. Natural Background Concentrations from Washington Ecology's *Sediment Cleanup User's Manual* (December 2019 update).
6. Soil cleanup levels from the MTCA Method B Cancer 173-340 WAC (February 2021 update).
7. -- = Value not available.
8. J = Result is estimated.
9. UK = Estimated maximum possible concentration (EMPC). Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.



Marysville, Washington

United States Geological Survey

7.5 Minute Series Topographic Map

Contour Interval: 20 feet

Scale: 1 inch = 24,000 feet

Date: 2020

0 2,000 4,000
Scale in Feet



WASHINGTON

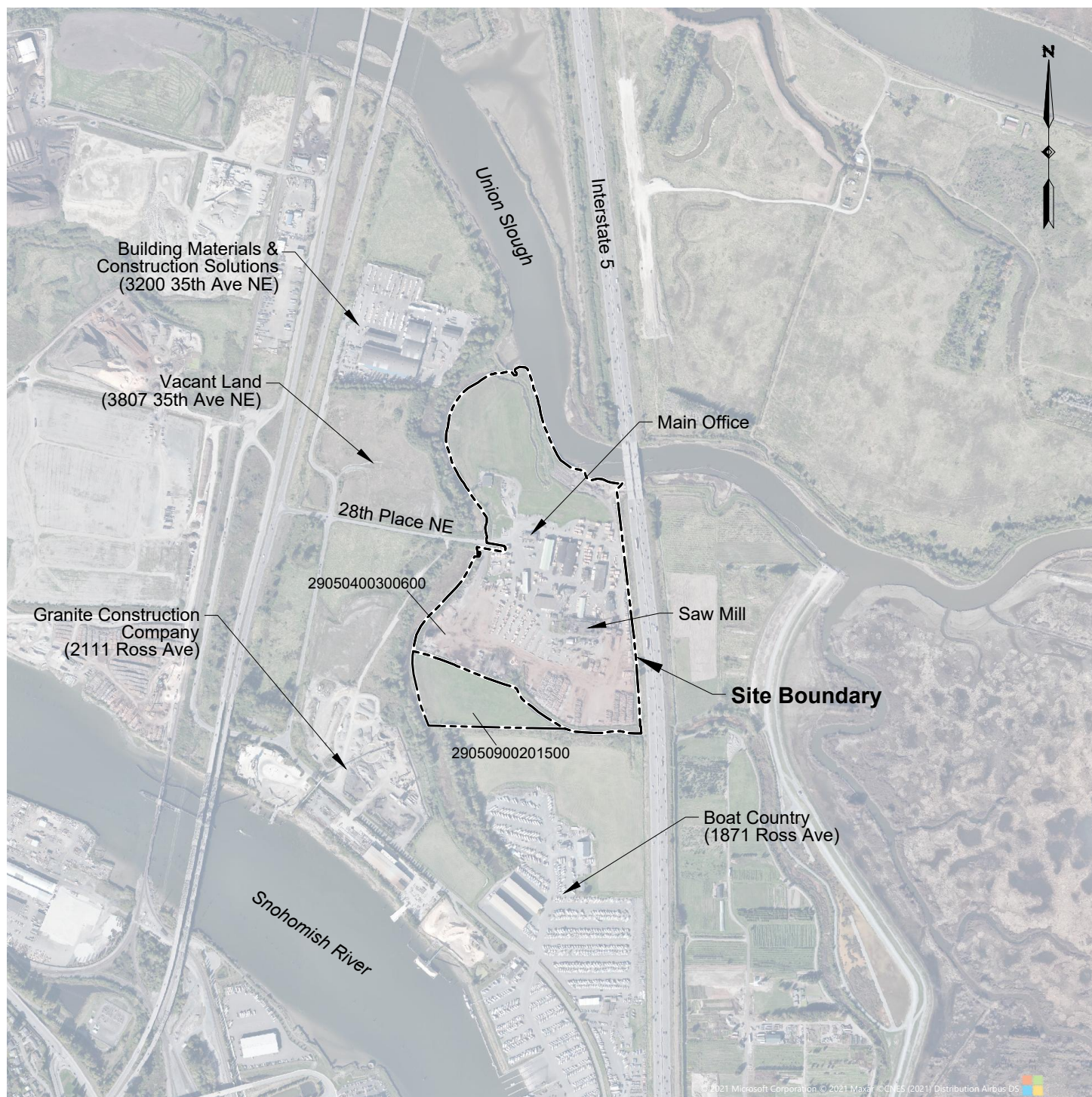
Site Location Map

Phase II Environmental Site Assessment
Buse Timber & Sales - 3812 28th Place NE
Everett, Washington

APEX Apex Companies, LLC
801 NW 42nd Street, #204
Seattle, Washington 98107

Project Number: ALTERRA-064	Drawn: JP	Approved: JF/JX
December 2021		

Figure
1



NOTE: Base map prepared from Microsoft Bing imagery (2021).
Parcel information from Snohomish County
(<ftp://ftp.snoco.org/assessor/shapefiles/>)

0 1,000 2,000
Scale in Feet

Site Vicinity Map

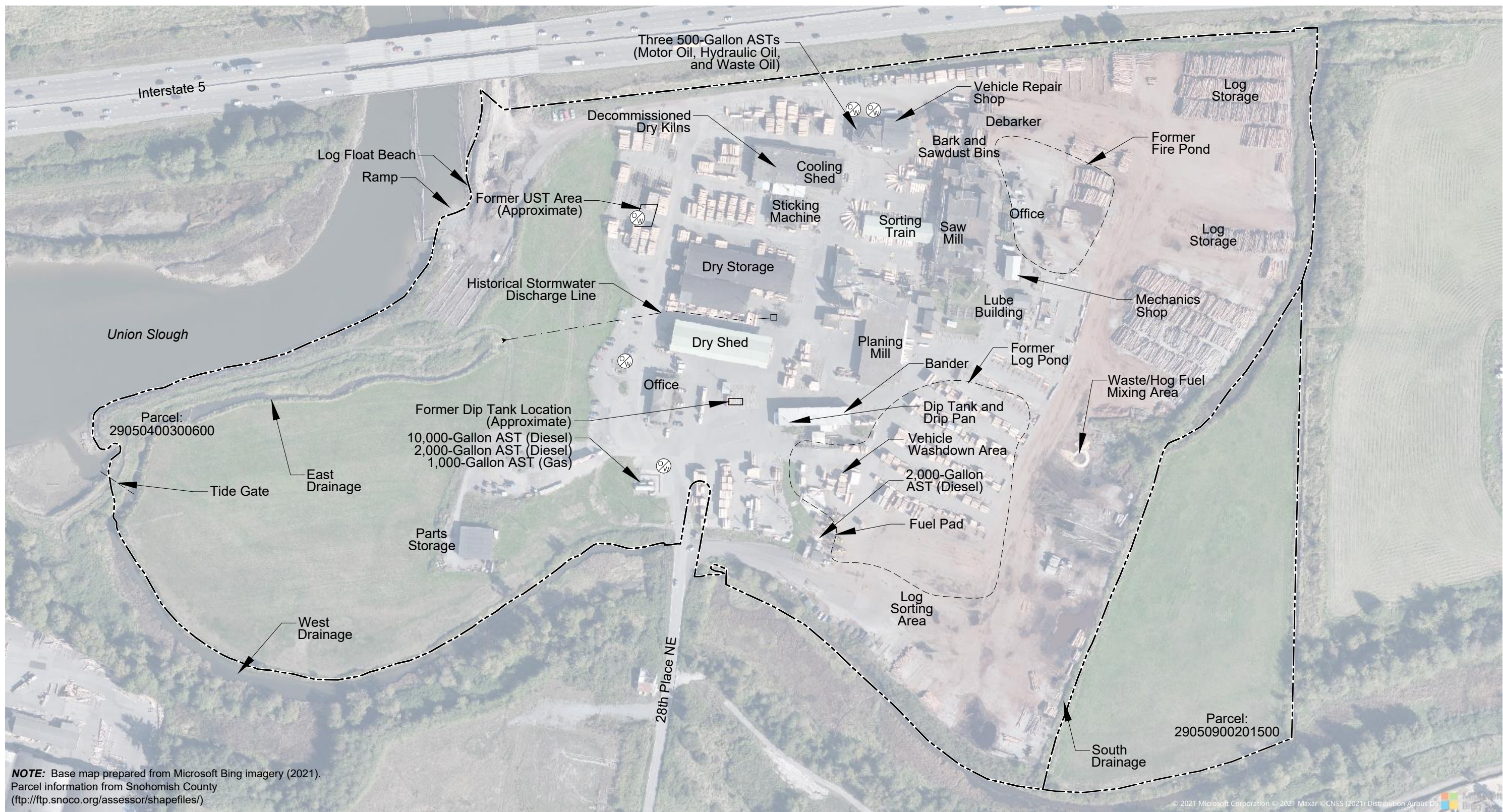
Phase II Environmental Site Assessment
Buse Timber & Sales - 3812 28th Place NE
Everett, Washington

Apex Companies, LLC
801 NW 42nd Street, #204
APEX Seattle, Washington 98107

Project Number: ALTERRA-064
December 2021

Drawn: JP
Approved: JF/JX

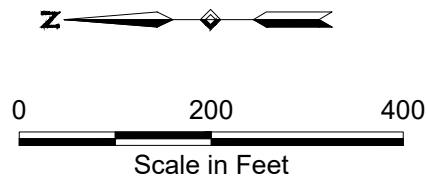
Figure
2



NOTE: Base map prepared from Microsoft Bing imagery (2021).
Parcel information from Snohomish County
(<ftp://ftp.snoco.org/assessor/shapefiles/>)

Legend:

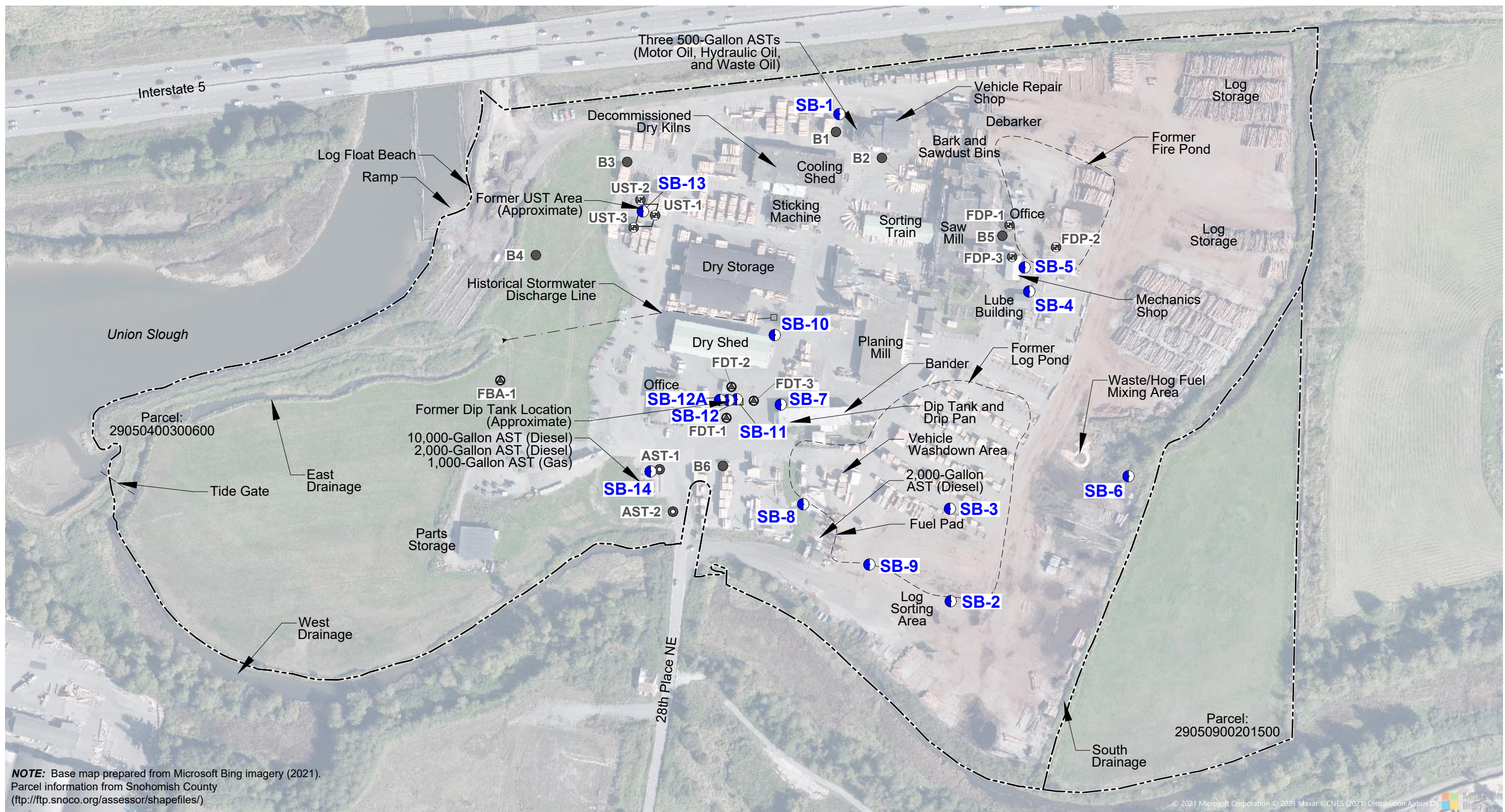
 Oil/Water Separator



Site Plan

Phase II Environmental Site Assessment
Buse Timber & Sales - 3812 28th Place NE
Everett, Washington

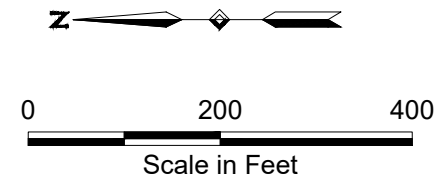
 Apex Companies, LLC 801 NW 42nd Street, #204 APEX Seattle, Washington 98107	Project Number: ALTERRA-064	Drawn: JP	Approved: JF/JX	Figure 3
	December 2021			



Legend:

- SB-1** ● Soil and Temporary Groundwater Monitoring Well Location
- B1** ● Approximate Historical Soil Boring (Terracon 2018)
- AST-1** ● Approximate Historical Soil Sample (Exponent 1998)

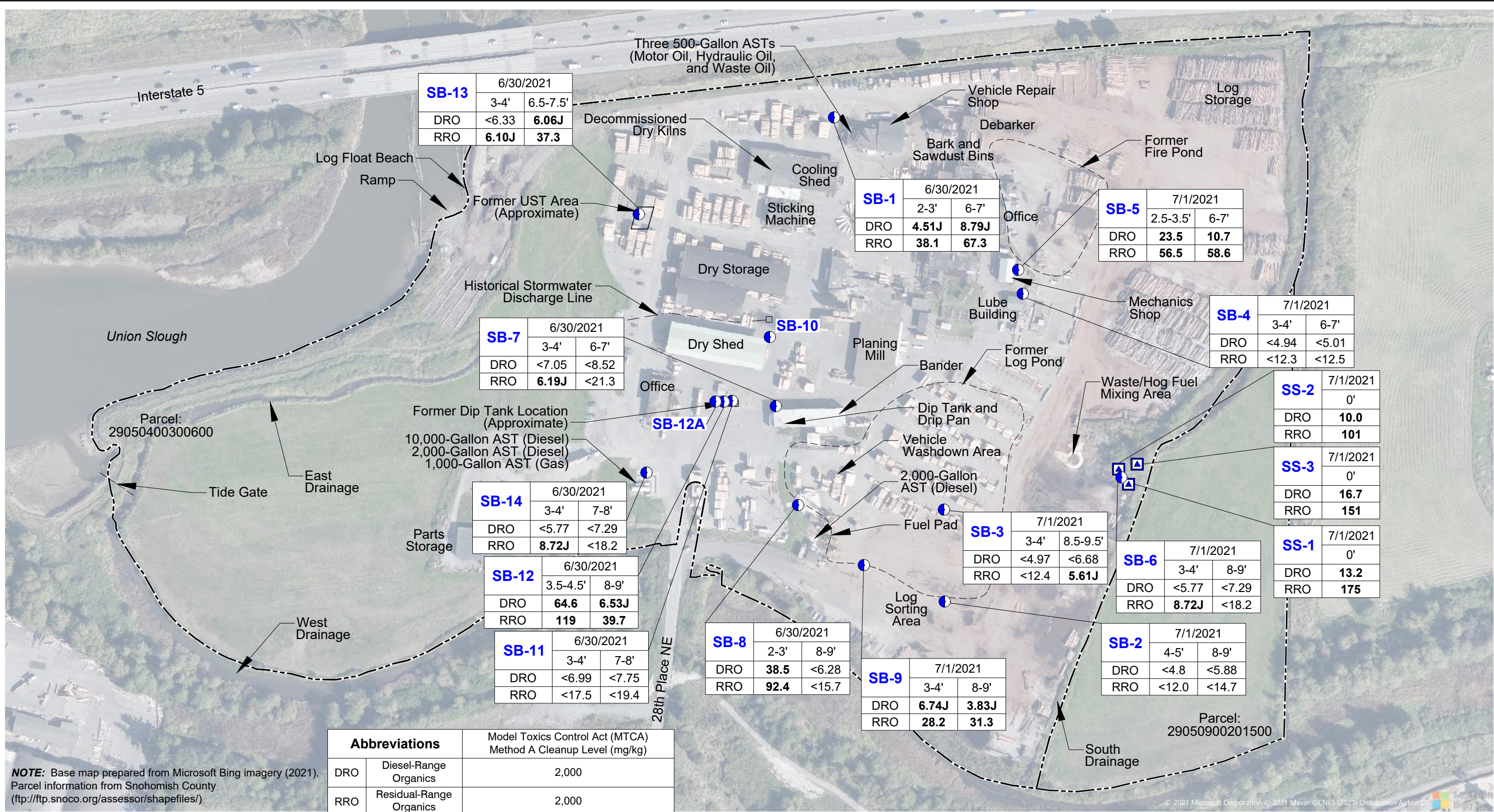
- FDT-1** ● Approximate Historical Subsurface Soil Sample (Exponent 1998)
- FDP-1** ● Approximate Historical Soil and Groundwater Sample (Exponent 1998)



Boring Location Map

Phase II Environmental Site Assessment
Buse Timber & Sales - 3812 28th Place NE
Everett, Washington

 Apex Companies, LLC 801 NW 42nd Street, #204 APEX Seattle, Washington 98107	Project Number: ALTERRA-064	Drawn: JP	Approved: JF/JX	Figure 4
	December 2021			



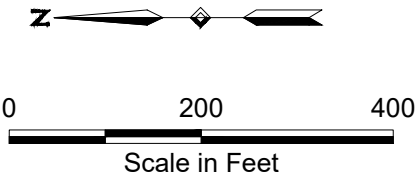
NOTE: Base map prepared from Microsoft Bing imagery (2021).
Parcel information from Snohomish County
(ftp://ftp.snoco.org/assessor/shapefiles/)

Abbreviations		Model Toxics Control Act (MTCA) Method A Cleanup Level (mg/kg)
DRO	Diesel-Range Organics	2,000
RRO	Residual-Range Organics	2,000

Legend:

- SB-1** Soil and Temporary Groundwater
Monitoring Well Location
- SS-1** Surface Soil Location

SB-1	6/30/2021	Sample Identification
	2-3'	Date Sampled
	DRO	Sample Depth in Feet
	RRO	Concentration in milligrams per kilogram (mg/kg) (J = Estimated Value)
	4.51J	Analyte Sampled
	38.1	



Total Petroleum Hydrocarbon Concentrations in Soil

Phase II Environmental Site Assessment
Buse Timber & Sales - 3812 28th Place NE
Everett, Washington

Apex Companies, LLC
801 NW 42nd Street, #204
Seattle, Washington 98107

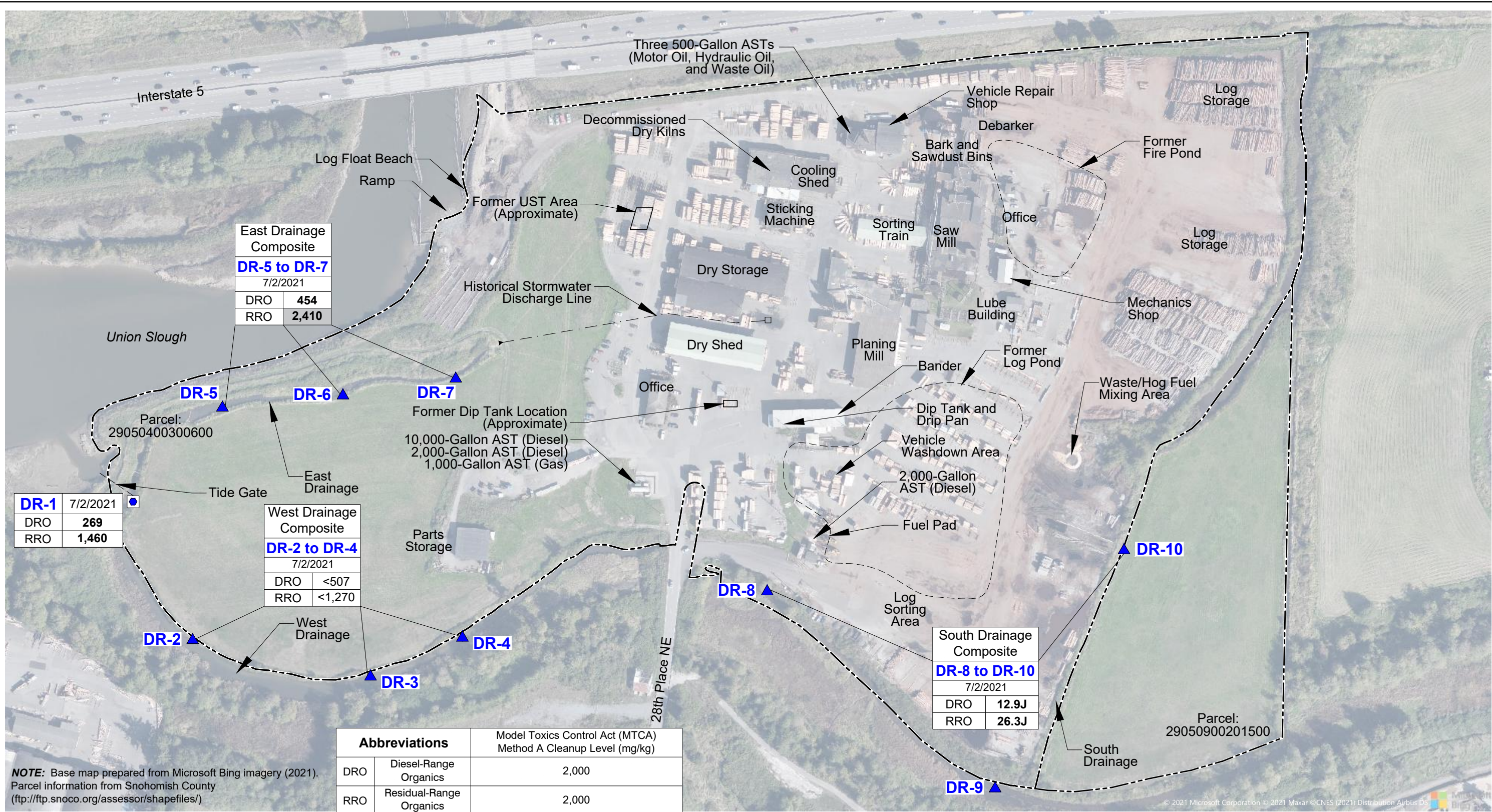
Project Number:
ALTERRA-064

Drawn:
JP

Approved:
JF/JX

December 2021

Figure
5



Legend:

DR-1 Discrete Sediment Location

DR-2 Drainage Sediment Sub-Sample Location

Abbreviations

Abbreviations		Model Toxics Control Act (MTCA) Method A Cleanup Level (mg/kg)
DRO	Diesel-Range Organics	2,000
RRO	Residual-Range Organics	2,000

Sample Identification

Sample Identification		Date Sampled	Concentration in milligrams per kilogram (mg/kg) (J = Estimated Value)	Analyte Sampled
DR-1	7/2/2021			
DRO	269			
RRO	1,460			

Shaded Values Exceed MTCA Method A Soil Cleanup Level

Total Petroleum Hydrocarbon Concentrations in Drainage Sediment

Phase II Environmental Site Assessment

Buse Timber & Sales - 3812 28th Place NE

Everett, Washington

0 200 400

Scale in Feet

Figure 6

Apex Companies, LLC

801 NW 42nd Street, #204

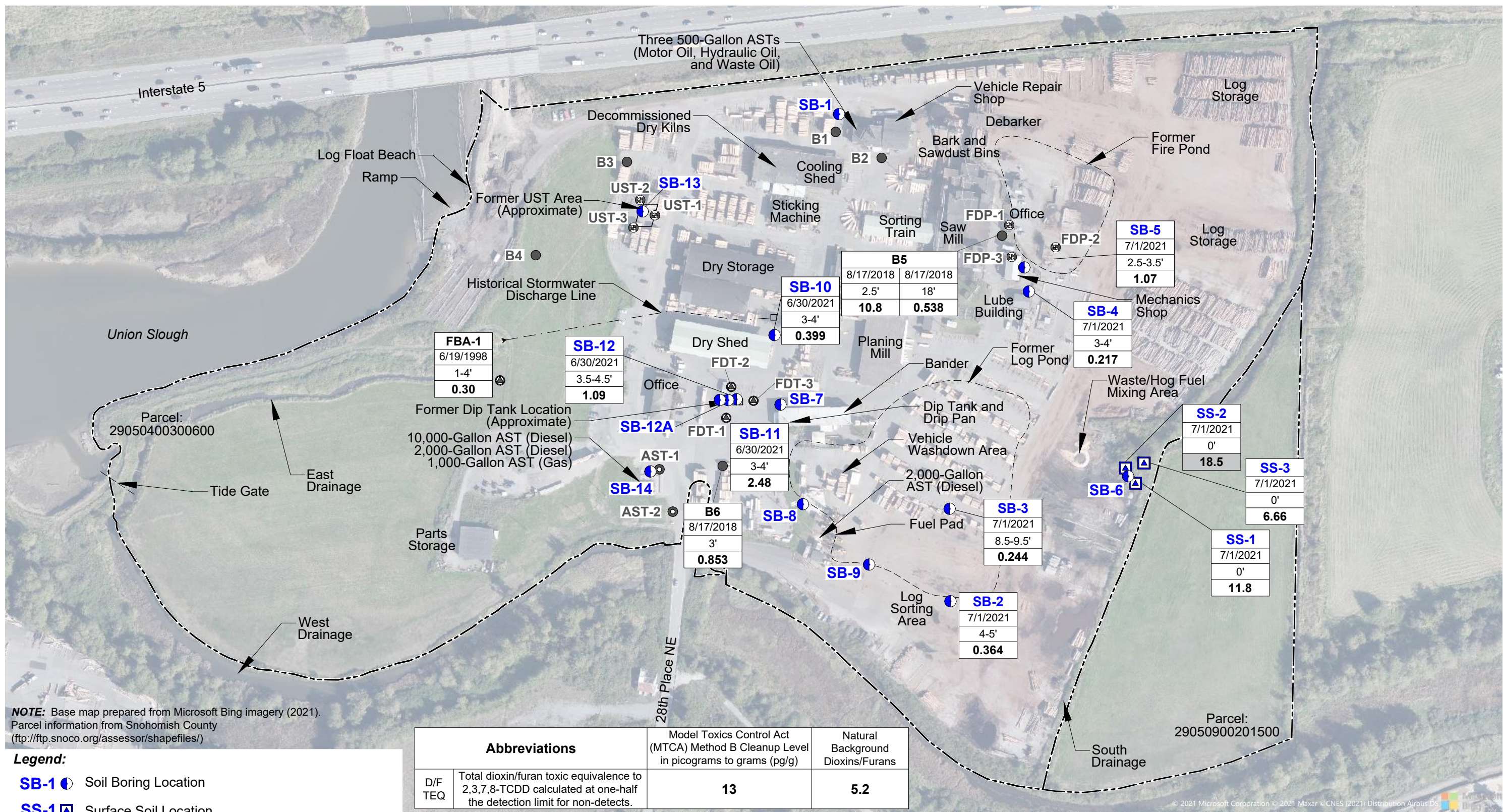
Seattle, Washington 98107

Project Number: ALTERRA-064

Drawn: JP

Approved: JF/JX

December 2021



NOTE: Base map prepared from Microsoft Bing imagery (2021).
Parcel information from Snohomish County
(ftp://ftp.snoco.org/assessor/shapefiles/)

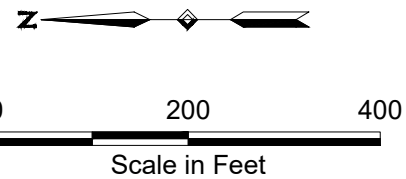
Legend:

- SB-1** ● Soil Boring Location
- SS-1** ▢ Surface Soil Location
- B1** ● Approximate Historical Soil Boring (Terracon 2018)
- AST-1** ● Approximate Historical Soil Sample (Exponent 1998)
- FDT-1** ● Approximate Historical Subsurface Soil Sample (Exponent 1998)
- FDP-1** ● Approximate Historical Soil and Groundwater Sample (Exponent 1998)

Abbreviations		Model Toxics Control Act (MTCA) Method B Cleanup Level in picograms to grams (pg/g)	Natural Background Dioxins/Furans
D/F TEQ	Total dioxin/furan toxic equivalence to 2,3,7,8-TCDD calculated at one-half the detection limit for non-detects.	13	5.2

FBA-1	Sample Identification
6/19/1998	Date Sampled
1-4'	Sample Depth in Feet
0.30	D/F TEQ Result in picograms per gram (pg/g; parts per trillion)

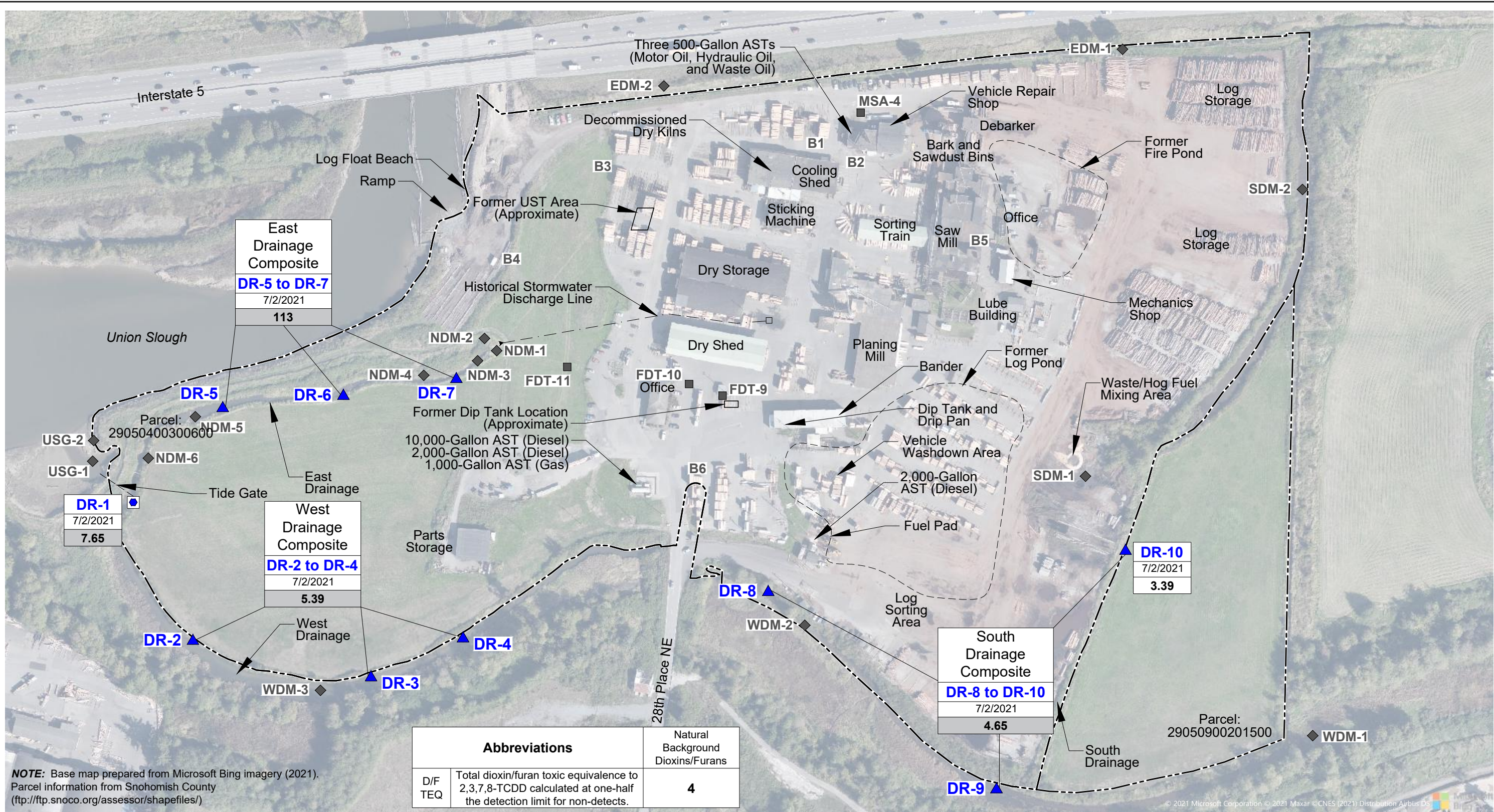
Shaded Values Exceed the MTCA Method B Cleanup Level



Dioxins/Furans in Soil

Phase II Environmental Site Assessment
Buse Timber & Sales - 3812 28th Place NE
Everett, Washington

 Apex Companies, LLC 801 NW 42nd Street, #204 Seattle, Washington 98107	Project Number: ALTERRA-064	Drawn: JP	Approved: JF/JX	Figure 7
	December 2021			



Dioxins/Furans in Sediment

Phase II Environmental Site Assessment
Buse Timber & Sales - 3812 28th Place NE
Everett, Washington

Appendix A

Boring Logs

Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, and grain size, and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:

MAJOR CONSTITUENT with additional remarks; color, moisture, minor constituents, density/consistency.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits and push probe explorations is estimated based on visual observation and is presented parenthetically on test pit and push probe exploration logs.

SAND and GRAVEL	Standard Penetration Resistance in Blows/Foot	SILT or CLAY	Standard Penetration Resistance in Blows/Foot	Approximate Shear Strength in TSF
<u>Density</u>		<u>Density</u>		
Very loose	0 - 4	Very soft	0 - 2	<0.125
Loose	4 - 10	Soft	2 - 4	0.125 - 0.25
Medium dense	10 - 30	Medium stiff	4 - 8	0.25 - 0.5
Dense	30 - 50	Stiff	8 - 15	0.5 - 1.0
Very dense	>50	Very Stiff	15 - 30	1.0 - 2.0
		Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture.
Sl. Moist	Some perceptible moisture, probably below optimum.
Moist	Probably near optimum moisture content.
Wet	Much perceptible moisture, probably above optimum.

Minor Constituents

Minor Constituents	Estimated Percentage
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

Sampling Symbols

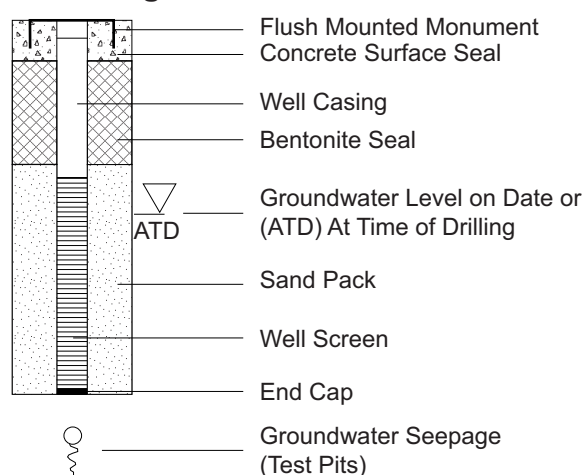
BORING AND PUSH-PROBE SYMBOLS

	Recovery
	No Recovery
	Temporarily Screened Interval
PID	Photoionization Detector Reading
W	Water Sample
	Sample Submitted for Chemical Analysis
NS	No Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
BF	Biogenic Film

TEST PIT SOIL SAMPLES

	Grab (Jar)
	Bag
	Shelby Tube

Groundwater Observations and Monitoring Well Construction



Key to Exploration Logs

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

 Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Project Number: ALTERRA-064	Drawn: JP	Approved: JX/HH	Figure Key
July 2021			



Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-1**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: June 30, 2021

Site Conditions: Sunny

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 15.2'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Asphalt (10") over sandy/silty CLAY; dark gray, slightly moist, high plasticity, fine-grained, with odor.

Strong odor, slightly moist.

Sandy/silty CLAY; dark blueish gray, wet, fine-grained.

Bottom of Boring at 20.0' BGS.
Backfill with Bentonite and Patch Asphalt.





Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-2**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: July 1, 2021

Site Conditions: Overcast

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 12.7'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Asphalt (7") over cobbles and gravel over silty SAND; dark brown and tan, dry, fine-grained.

Silty CLAY; dark gray, slightly moist, high plasticity, fine-grained.

Silty SAND; dark grayish blue, wet.

Bottom of Boring at 15.0' BGS.
Backfill with Bentonite and Patch Asphalt.





Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-3**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: July 1, 2021

Site Conditions: Sunny

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 12.3'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Asphalt (6") over cobbles and gravel over SAND; dark brown and tan, dry, fine-grained.

Clay lens (1").

Silty CLAY; dark gray, slightly moist, fine-grained, well sorted.

Sandy CLAY; dark gray, wet, high plasticity,

Bottom of Boring at 15.0' BGS.
Backfill with Bentonite and Patch Asphalt.

▽



Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-4**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: July 1, 2021

Site Conditions: Overcast

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 6.8'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Asphalt (10") over cobbly GRAVEL; white.

Clay lens (4"); dark brown, fine-grained, with organic material.

Silty SAND; fine-grained, white/tan/dark gray, dry.

Bottom of Boring at 10.0' BGS.
Backfill with Bentonite and Patch Asphalt.





Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-5**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: July 1, 2021

Site Conditions: Sunny

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 6.4'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Asphalt (7") over silty SAND; dark brown with light gray, slightly moist, fine-grained, moderate plasticity, well rounded.

SAND; dark brown and light gray, wet, fine-grained, low plasticity, well rounded.

Bottom of Boring at 10.0' BGS.
Backfill with Bentonite and Patch Asphalt.

Depth, feet

Core Interval/Recovery

Laboratory Sample ID

PID

Sheen

5

SB-5 (0-5)

<5

NS

SB-5 (5-10)

6

NS

10

15

20

25

30

35

5

10

15

20

25

30

35





Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-6**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: July 1, 2021

Site Conditions: Sunny

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 11.7'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Bark/wood dust (6") over cobbly GRAVEL; light gray, dry.

Silty CLAY; light gray, slightly moist, fine-grained, high plasticity.

Gravelly CLAY; medium to dark brown, wet.

Bottom of Boring at 15.0' BGS. (Backfill with Bentonite and Patch Asphalt.





Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-7**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: June 30, 2021

Site Conditions: Overcast

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 9.7'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Asphalt (9") over GRAVEL/PEBBLES; gray, Dry.

Silty CLAY; gray, dry, fine-grained, with organic matter.

Gravelly SAND; light gray, slightly moist, with organic material.

Bottom of Boring at 10.0' BGS.
Backfill with Bentonite and Patch Asphalt.





Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-8**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: June 30, 2021

Site Conditions: Sunny

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 2.9'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Topsoil with fine-grained sandy soil; dark brown, moist, well rounded.

CLAY; fine-grained, dark gray, slightly moist.

Gravelly CLAY; dark gray, wet.

Bottom of Boring at 10.0' BGS.
Backfill with Bentonite.





Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-9**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: July 1, 2021

Site Conditions: Overcast

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 21.3'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	
					Asphalt (9") over gravelly SAND; light tan, coarse-grained, poorly sorted.	
5		SB-9 (0-5)	<5	NS	SAND; dark brown to tan, slightly moist, fine-grained, with organic material.	5
10		SB-9 (5-10)	<5	NS	Silty CLAY; dark brown, slightly moist, fine-grained, with occasional organic material.	10
15			<5	NS		15
20			<5	NS	Sandy CLAY; fine-grained, dark grayish blue, wet.	20
25			<5	NS	Bottom of Boring at 25.0' BGS. Backfill with Bentonite and Patch Asphalt.	25
30						30
35						35



Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-10**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: June 30, 2021

Site Conditions: Overcast

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 16.54'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	
5		SB-10 (0-5)	<5	NS	Asphalt (9") over sandy CLAY; gray with black flecks, dry, fine-grained.
5					Silty CLAY; light gray, slightly moist, fine-grained.
10		SB-10 (5-10)	<5	NS	Bottom of Boring at 10.0' BGS. Redrilled to 20.0' for groundwater sample.
15					
20					Bottom of Boring at 20.0' BGS. Backfill with Bentonite and Patch Asphalt.
25					
30					
35					



Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-11**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: June 30, 2021

Site Conditions: Overcast

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 6.8'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Asphalt (10") over **sandy silty** CLAY; dark gray/brown, dry, fine-grained.

Gravelly CLAY; dark gray, slightly moist, poorly sorted.
CLAY; dark gray, dry, fine-grained, poorly sorted.

Bottom of Boring at 10.0' BGS.
Backfill with Bentonite and Patch Asphalt.





Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-12/12A**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: June 30, 2021-July 1, 2021

Site Conditions: Overcast

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 22.0'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	
5		SB-12 (0-5)	<5	NS	Asphalt (12") over gravelly SAND; light gray, dry, coarse-grained.	
					Silty CLAY; dark brown, slightly moist, fine-grained, with organic material (wood).	5
10		SB-12 (5-10)	<5	NS		10
					Gravelly CLAY; dark brown, slightly moist.	
					Bottom of Boring SB-12 at 10.0' BGS.	
					Moved equipment 1 foot and redrilled to 25.0' (7/1/21) for groundwater sample (SB-12A).	
15			<5	NS		15
20			<5	NS		20
					Silty SAND; dark gray, wet, soft.	
25			<5	NS		25
					Bottom of Boring at 25.0' BGS.	
					Backfill with Bentonite and Patch Asphalt.	
30						30
35						35



Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-13**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: June 30, 2021

Site Conditions: Sunny

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): 23.5'

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	
5	SB-13 (0-5)	<5	NS	Asphalt (8") over sandy CLAY; dark brown, slightly moist, fine-grained, with small wood chips and rounded clasts.	5
				Strong odor.	
10	SB-13 (5-10)	<5	NS	Silty CLAY; dark brown/gray, slightly moist.	10
				Strong odor.	
15	SB-13 (10-15)	<5	NS	Silty CLAY; dark brown.	15
				Slight odor.	
20				Sandy CLAY; dark gray, slightly moist, well sorted.	20
25				Bottom of Boring at 25.0' BGS. (Backfill with Bentonite and Patch Asphalt.	25
30					30
35					35



Apex Companies, LLC
600 Stewart Street, #400
Seattle, Washington 98101

Buse Timber & Sales
3812 28th Place NE
Everett, Washington

Boring Number: **SB-14**

Project Number: **ALTERRA-064**

Logged By: H. Hiscox

Date: June 30, 2021

Site Conditions: Overcast

Drilling Contractor: Holocene Drilling

Drilling Equipment: Geoprobe

Sampler Type: 2-inch macrocore

Depth to Water (ATD): Not Encountered

Surface Elevation: Not Measured

Boring Details and Notes:

Lithologic Description

Asphalt (8") over silty CLAY; light gray, slightly moist, fine-grained.

Small amount of organic material (wood chips) present in clay.

Bottom of Boring at 10.0' BGS.
Backfill with Bentonite and Patch Asphalt.

Depth, feet

Core Interval/Recovery

Laboratory Sample ID

PID

Sheen



Appendix B

Laboratory Report



Focus

Model Toxics Control Act Cleanup Regulation: Process for Cleanup of Hazardous Waste Sites

In March of 1989, an innovative, citizen-mandated toxic waste cleanup law went into effect in Washington, changing the way hazardous waste sites in this state are cleaned up. Passed by voters as Initiative 97, this law is known as the Model Toxics Control Act, chapter 70.105D RCW. This fact sheet provides a brief overview of the process for the cleanup of contaminated sites under the rules Ecology adopted to implement that Act (chapter 173-340 WAC).

How the Law Works

The cleanup of hazardous waste sites is complex and expensive. In an effort to avoid the confusion and delays associated with the federal Superfund program, the Model Toxics Control Act is designed to be as streamlined as possible. It sets strict cleanup standards to ensure that the quality of cleanup and protection of human health and the environment are not compromised. At the same time, the rules that guide cleanup under the Act have built-in flexibility to allow cleanups to be addressed on a site-specific basis.

The Model Toxics Control Act funds hazardous waste cleanup through a tax on the wholesale value of hazardous substances. The tax is imposed on the first in-state possessor of hazardous substances at the rate of 0.7 percent, or \$7 per \$1,000. Since its passage in 1988, the Act has guided the cleanup of thousands of hazardous waste sites that dot the Washington landscape. The Washington State Department of Ecology's Toxic Cleanup Program ensures that these sites are investigated and cleaned up.

What Constitutes a Hazardous Waste Site?

Any owner or operator who has information that a hazardous substance has been released to the environment at the owner or operator's facility and may be a threat to human health or the environment must report this information to the Department of Ecology (Ecology). If an "initial investigation" by Ecology confirms further action (such as testing or cleanup) may be necessary, the facility is entered onto either Ecology's "Integrated Site Information System" database or "Leaking Underground Storage Tank" database. These are computerized databases used to track progress on all confirmed or suspected contaminated sites in Washington State. All confirmed sites that have not been already voluntarily cleaned up are ranked and placed on the state "Hazardous Sites List." Owners, operators, and other persons known to be potentially liable for the cleanup of the site will receive an "Early Notice Letter" from Ecology notifying them that their site is suspected of needing cleanup, and that it is Ecology's policy to work cooperatively with them to accomplish prompt and effective cleanup.

Who is Responsible for Cleanup?

Any past or present relationship with a contaminated site may result in liability. Under the Model Toxics Control Act a potentially liable person can be:

- A current or past facility owner or operator.
- Anyone who arranged for disposal or treatment of hazardous substances at the site.
- Anyone who transported hazardous substances for disposal or treatment at a contaminated site, unless the facility could legally receive the hazardous materials at the time of transport.
- Anyone who sells a hazardous substance with written instructions for its use, and abiding by the instructions results in contamination.

In situations where there is more than one potentially liable person, each person is jointly and severally liable for cleanup at the site. That means each person can be held liable for the entire cost of cleanup. In cases where there is more than one potentially liable person at a site, Ecology encourages these persons to get together to negotiate how the cost of cleanup will be shared among all potentially liable persons.

Ecology must notify anyone it knows may be a “potentially liable person” and allow an opportunity for comment before making any further determination on that person’s liability. The comment period may be waived at the potentially liable person’s request or if Ecology has to conduct emergency cleanup at the site.

Achieving Cleanups through Cooperation

Although Ecology has the legal authority to order a liable party to clean up, the department prefers to achieve cleanups cooperatively. Ecology believes that a non-adversarial relationship with potentially liable persons improves the prospect for prompt and efficient cleanup. The rules implementing the Model Toxics Control Act, which were developed by Ecology in consultation with the Science Advisory Board (created by the Act), and representatives from citizen, environmental and business groups, and government agencies, are designed to:

- Encourage independent cleanups initiated by potentially liable persons, thus providing for quicker cleanups with less legal complexity.
- Encourage an open process for the public, local government and liable parties to discuss cleanup options and community concerns.
- Facilitate cooperative cleanup agreements rather than Ecology-initiated orders. *Ecology can, and does, however use enforcement tools in emergencies or with recalcitrant potentially liable persons.*

What is the Potentially Liable Person’s Role in Cleanup?

The Model Toxics Control Act requires potentially liable persons to assume responsibility for cleaning up contaminated sites. For this reason, Ecology does not usually conduct the actual cleanup when a potentially liable person can be identified. Rather, Ecology oversees the cleanup of sites to ensure that investigations, public involvement and actual cleanup and monitoring are done appropriately. Ecology’s costs of this oversight are required to be paid by the liable party.

When contamination is confirmed at the site, the owner or operator may decide to proceed with cleanup without Ecology assistance or approval. Such “independent cleanups” are

allowed under the Model Toxics Control Act under most circumstances, but must be reported to Ecology, and are done at the owner's or operator's own risk. Ecology may require additional cleanup work at these sites to bring them into compliance with the state cleanup standards. Most cleanups in Washington are done independently.

Other than local governments, potentially liable persons conducting independent cleanups do not have access to financial assistance from Ecology. Those who plan to seek contributions from other persons to help pay for cleanup costs need to be sure their cleanup is "the substantial equivalent of a department-conducted or department-supervised remedial action." Ecology has provided guidance on how to meet this requirement in WAC 173-340-545. Persons interested in pursuing a private contribution action on an independent cleanup should carefully review this guidance prior to conducting site work.

Working with Ecology to Achieve Cleanup

Ecology and potentially liable persons often work cooperatively to reach cleanup solutions. Options for working with Ecology include formal agreements such as consent decrees and agreed orders, and seeking technical assistance through the Voluntary Cleanup Program. These mechanisms allow Ecology to take an active role in cleanup, providing help to potentially liable persons and minimizing costs by ensuring the job meets state standards the first time. This also minimizes the possibility that additional cleanup will be required in the future – providing significant assurances to investors and lenders.

Here is a summary of the most common mechanisms used by Ecology:

- **Voluntary Cleanup Program:** Many property owners choose to cleanup their sites independent of Ecology oversight. This allows many smaller or less complex sites to be cleaned up quickly without having to go through a formal process. A disadvantage to property owners is that Ecology does not approve the cleanup. This can present a problem to property owners who need state approval of the cleanup to satisfy a buyer or lender.

One option to the property owner wanting to conduct an independent cleanup yet still receive some feedback from Ecology is to request a technical consultation through Ecology's Voluntary Cleanup Program. Under this voluntary program, the property owner submits a cleanup report with a fee to cover Ecology's review costs. Based on the review, Ecology either issues a letter stating that the site needs "No Further Action" or identifies what additional work is needed. Since Ecology is not directly involved in the site cleanup work, the level of certainty in Ecology's response is less than in a consent decree or agreed order. However, many persons have found a "No Further Action" letter to be sufficient for their needs, making the Voluntary Cleanup Program a popular option.
- **Consent Decrees:** A consent decree is a formal legal agreement filed in court. The work requirements in the decree and the terms under which it must be done are negotiated and agreed to by the potentially liable person, Ecology and the state Attorney General's office. Before consent decrees can become final, they must undergo a public review and comment period that typically includes a public hearing. Consent decrees protect the potentially liable person from being sued for "contribution" by other persons that incur cleanup expenses at the site while facilitating any contribution claims against the other persons when they are responsible for part of the cleanup costs. Sites cleaned up under a consent decree are also exempt from having to obtain certain state and local permits that could delay the cleanup.

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- **De Minimus Consent Decree:** Landowners whose contribution to site contamination is “insignificant in amount and toxicity” may be eligible for a de minimus consent decree. In these decrees, landowner typically settle their liability by paying for some of the cleanup instead of actually conducting the cleanup work. Ecology usually accepts a de minimus settlement proposal only if the landowner is affiliated with a larger site cleanup that Ecology is currently working on.
 - **Prospective Purchaser Consent Decree:** A consent decree may also be available for a “prospective purchaser” of contaminated property. In this situation, a person who is not already liable for cleanup and wishes to purchase a cleanup site for redevelopment or reuse may apply to negotiate a prospective purchaser consent decree. The applicant must show, among other things, that they will contribute substantial new resources towards the cleanup. Cleanups that also have a substantial public benefit will receive a higher priority for prospective purchaser agreements. If the application is accepted, the requirements for cleanup are negotiated and specified in a consent decree so that the purchaser can better estimate the cost of cleanup before buying the land.
 - **Agreed Orders:** Unlike a consent decree, an agreed order is not filed in court and is not a settlement. Rather, it is a legally binding administrative order issued by Ecology and agreed to by the potentially liable person. Agreed orders are available for remedial investigations, feasibility studies, and final cleanups. An agreed order describes the site activities that must occur for Ecology to agree not to take enforcement action for that phase of work. As with consent decrees, agreed orders are subject to public review and offer the advantage of facilitating contribution claims against other persons and exempting cleanup work from obtaining certain state and local permits.

Ecology-Initiated Cleanup Orders

Administrative orders requiring cleanup activities without an agreement with a potentially liable person are known as **enforcement orders**. These orders are usually issued to a potentially liable person when Ecology believes a cleanup solution cannot be achieved expeditiously through negotiation or if an emergency exists. If the responsible party fails to comply with an enforcement order, Ecology can clean up the site and later recover costs from the responsible person(s) at up to three times the amount spent. The state Attorney General’s Office may also seek a fine of up to \$25,000 a day for violating an order. Enforcement orders are subject to public notification.

Financial Assistance

Each year, Ecology provides millions of dollars in grants to local governments to help pay for the cost of site cleanup. In general, such grants are available only for sites where the cleanup work is being done under an order or decree. Ecology can also provide grants to local governments to help defray the cost of replacing a public water supply well contaminated by a hazardous waste site. Grants are also available for local citizen groups and neighborhoods affected by contaminated sites to facilitate public review of the cleanup. See Chapter 173-322 WAC for additional information on grants to local governments and Chapter 173-321 WAC for additional information on public participation grants.

Public Involvement

Public notices are required on all agreed orders, consent decrees, and enforcement orders. Public notification is also required for all Ecology-conducted remedial actions.

Ecology's Site Register is a widely used means of providing information about cleanup efforts to the public and is one way of assisting community involvement. The Site Register is published every two weeks to inform citizens of public meetings and comment periods, discussions or negotiations of legal agreements, and other cleanup activities. The Site Register can be accessed on the Internet at: www.ecy.wa.gov/programs/tcp/pub_inv/pub_inv2.html.

How Sites are Cleaned Up

The rules describing the cleanup process at a hazardous waste site are in chapter 173-340 WAC. The following is a general description of the steps taken during the cleanup of an average hazardous waste site. Consult the rules for the specific requirements for each step in the cleanup process.

1. Site Discovery: Sites where contamination is found must be reported to Ecology's Toxics Cleanup Program within 90 days of discovery, unless it involves a release of hazardous materials from an underground storage tank system. In that case, the site discovery must be reported to Ecology within 24 hours. At this point, potentially liable persons may choose to conduct independent cleanup without assistance from the department, but cleanup results must be reported to Ecology.

2. Initial Investigation: Ecology is required to conduct an initial investigation of the site within 90 days of receiving a site discovery report. Based on information obtained about the site, a decision must be made within 30 days to determine if the site requires additional investigation, emergency cleanup, or no further action. If further action is required under the Model Toxics Control Act, Ecology sends early notice letters to owners, operators and other potentially liable persons inviting them to work cooperatively with the department.

4. Hazard Ranking: The Model Toxics Control Act requires that sites be ranked according to the relative health and environmental risk each site poses. Working with the Science Advisory Board, Ecology created the Washington Ranking Method to categorize sites using data from site hazard assessments. Sites are ranked on a scale of 1 to 5. A score of 1 represents the highest level of risk and 5 the lowest. Ranked sites are placed on the state Hazardous Sites List.

3. Site Hazard Assessment: A site hazard assessment is conducted to confirm the presence of hazardous substances and to determine the relative risk the site poses to human health and the environment.

5. Remedial Investigation/Feasibility Study: A remedial investigation and feasibility study is conducted to define the extent and magnitude of contamination at the site. Potential impacts on human health and the environment and alternative cleanup technologies are also evaluated in this study. Sites being cleaned up by Ecology or by potentially liable persons under a consent decree, agreed order or enforcement order are required to provide for a 30 day public review before finalizing the report.

6. Selection of Cleanup Action: Using information gathered during the study, a cleanup action plan is developed. The plan identifies preferred cleanup methods and specifies cleanup standards and other requirements at the site. A draft of the plan is subject to public review and comment before it is finalized.

7. Site Cleanup: Actual cleanup begins when the cleanup action plan is implemented. This includes design, construction, operation and monitoring of cleanup actions. A site may be taken off the Hazardous Sites List after cleanup is completed and Ecology determines cleanup standards have been met.

For More Information / Special Accommodation Needs

If you would like more information about the state Model Toxics Control Act, please call us toll-free at **1-800-826-7716**, or contact your regional Washington State Department of Ecology office listed below. Information about site cleanup, including a listing of ranked hazardous waste sites, is also accessible through our Internet address:

<http://www.ecy.wa.gov/programs/tcp/cleanup.html>

- **Northwest Regional Office** **425/649-7000**
(Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom Counties)
- **Southwest Regional Office** **360/407-6300**
(Southwestern Washington, Olympic Peninsula, Pierce, Thurston and Mason Counties)
- **Central Regional Office** **509/575-2490**
(Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima Counties)
- **Eastern Regional Office** **509/329-3400**
(Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman Counties)

If you need this publication in an alternative format, please contact the Toxics Cleanup Program at (360) 407-7170. Persons with a hearing loss can call 711 for the Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Disclaimer Notice: This fact sheet is intended to help the user understand the Model Toxics Control Act Cleanup Regulation, chapter 173-340 WAC. It does not establish or modify regulatory requirements.

PLP Waiver Form

Richard Hoopis, Senior Director, Market Development
PKST Everett 28th Place LLC
c/o Peakstone Realty Trust
150 N Riverside Plaza. Suite 1950
Chicago, IL 60606

Pursuant to WAC 173-340-500 and WAC 173-340-520(1)(b)(i), I, Richard Hoopis, a duly authorized representative of PKST Everett 28th Place LLC, do hereby waive the right to the thirty (30) day notice and comment period described in WAC 173-340-500(3) and accept status of Peakstone Realty Trust as a Potentially Liable Person at the following contaminated site:

- **Site Name:** Buse Timber & Sales
- **Site Address:** 3812 28th Pl NE, Everett
- **Cleanup Site ID:** 4340
- **Facility/Site ID:** 2786
- **Snohomish County Assessor's Parcel Number(s):** 29050400300600 and 29050900201500

By waiving this right, PKST Everett 28th Place LLC makes no admission of liability.

Signature

Date

Relation to the Site: